FARM CHEMICALS

September Volume 123 No. 9 50 cents
Pioneer Journal of the Industry

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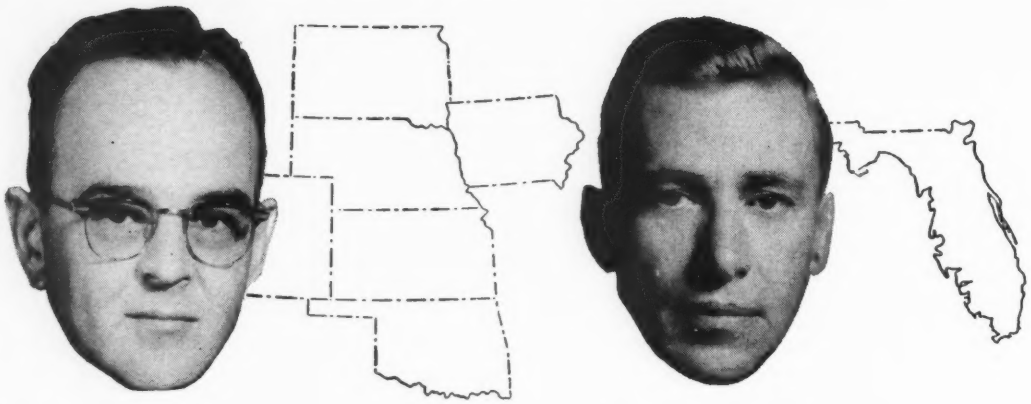

ROBERT BILLINGS
as a P.C.A. Sales Representative, covers the states of Iowa, South Dakota, Nebraska, Kansas, Oklahoma, and Colorado. A graduate of the Missouri School of Mines, he is a member of the American Institute of Mining Engineers.

DENNIS ROBERTSON
was appointed P.C.A. Sales Representative for Florida in 1958. A graduate of the University of Virginia, he has had wide sales experience, spending a number of years in the fertilizer industry in the south-eastern states.

Your Men on our payroll

These men are two of the members of the P.C.A. sales team serving the fertilizer industry. While they are on our payroll, their chief responsibility is to you. Selling potash is but part of their job; the most important part is furnishing you with whatever service and information you require . . . both have the experience and background to do the job well. The P.C.A. salesman is your man . . . make good use of him.

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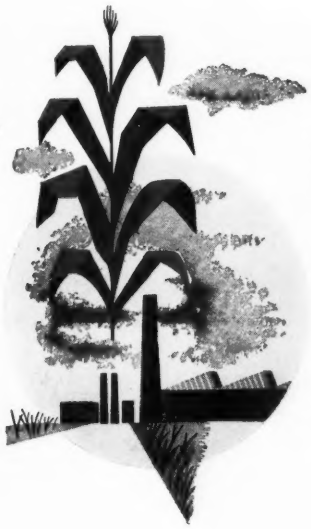
Versatile effective organic phosphate insecticide for long residual fly control, multiple insect control on most fruit and vegetable crops. Extensively used by PCO industry for control of roaches and other household insects. May be formulated for household insect sprays.



SIMAZINE HERBICIDE
Pre-emergence herbicide for use on corn. One application gives season-long effective weed control. Safe to corn. Performs best in areas where rainfall is normally expected 10 to 14 days after planting. Also for pre-emergence use on nursery stock, and at higher levels of application, as an industrial herbicide. Extremely low toxicity to humans and animals.

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METHOXYCHLOR INSECTICIDE
Multi-purpose insecticide. Long residual action against many insect species attacking fruit, vegetable, forage crops, and stored grain. Controls horn flies, cattle lice and ticks on livestock.

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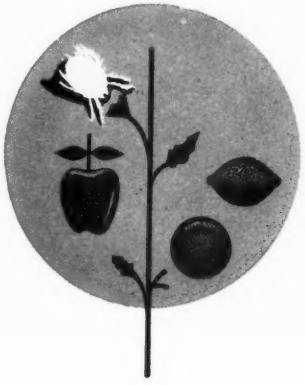

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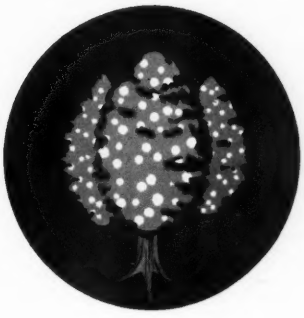
Safe, effective miticide for use on deciduous and citrus fruit, ornamentals and nursery stock. Long residual action.



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Original metal chelates in agriculture. For correction of minor element deficiencies of ornamentals, fruit trees, vegetables, turf. Compatible with most commonly used insecticides, fungicides, fertilizers.

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MEMBER BUSINESS PUBLICATIONS AUDIT

The national business magazine for the fertilizer and pesticide industries, FARM CHEMICALS, serves primarily those persons responsible for management, marketing and production. It has a qualified circulation for selected executive and supervisory persons within specified segments of these industries, as well as in certain closely allied fields. Subscription rates to all others are: in the U.S., its possessions, Canada, Cuba and Panama: $6.00; in other countries: $7.50. Current issue 50 cents. Back issues $1.00. (Current issues become back copies on the 5th of the month following publication.) Established in 1894 as *The American Fertilizer*.

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THE COVER PICTURE

Discussing the "agronomic" know-how with Don Sarver and John Sarver is Dudley Potter, Potter Implement Company, Bowling Green, Ohio. Potter is checking Sarvers' soil test and plant population in the course of his selling a crop production program. Farm Chemicals photo.

NOW....PROMPT MOLTEN SULPHUR DELIVERIES

Radiating out from Cincinnati

This is the first of the TGS Terminal Molten Sulphur Truck and Rail Distribution Stations being set up to serve industrial areas of the country. Regular large tonnage barge shipments of Molten Sulphur from our mines in the Gulf area are keeping this Cincinnati Terminal well-stocked to meet the growing demand for Molten Sulphur in the Ohio River area.

Additional Molten as well as Solid Sulphur terminals are being considered for other parts of the country.

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Sulphur Producing Units: Newgulf, Texas • Spindletop, Texas • Moss Bluff, Texas • Fannett, Texas • Worland, Wyoming • Okotoks, Alberta, Canada

Molten Sulphur in tank *cars* can be delivered to any point in the States or Canada from our nearest mine or recovery plant. Barge deliveries of Molten Sulphur are available on all navigable inland waters. Solid Sulphur, as for many years, is deliverable all over the world. Large inventories at our mines assure industry it will get its supplies when needed.

LETTERS

F
C

SALESENSE

Sanford, Fla.

Please send me all four of your articles by O. C. Merrett on "Salesense Series." Thank you.

Sincerely yours,
JAMES R. MCCONNELL
Sales Manager
Fertilizer & Chemical Branch
CHASE & COMPANY

Richmond, Calif.

Please send us 10 reprints of the following article appearing in the August, 1960 issue:

"Organize Your Time" by O. C. Merrett.

Very truly yours,
IVOR R. BURDEN
Executive Vice President
UNITED-HECKATHORN

Baltimore, Md.

We would like to purchase fifty reprints of the article entitled "Organize Your Time" which begins on page 18 of the August issue of FARM CHEMICALS . . .

Yours very truly,
ELLIOTT P. BARRETT
Technical Director
BAUGH AND SONS CO.

St. Louis, Mo.

Please send us ten reprints of your Salesense Series (article) entitled, "Plug Up the Leaks in your Sales Plan." . . .

Yours very truly,
JOHN E. BROWN
CENTRAL FARM
AUTOMATION CO.

Whittier, Calif.

Will you please send us the following FC reprints from the Salesense Series:

Five copies of "Sell to Dominant Buying Motive," five copies of "Knowledge Makes the Difference" and five copies of "Plug Up the Leaks in Your Sales Plan."

Enclosed please find remittance . . .

Sincerely,
GORDON G. BLACK
District Manager
CALIFORNIA
SPRAY-CHEMICAL CORP.

Albert Lea, Minn.

I have read your August Volume 123 issue and enjoyed very much some of the articles, primarily the one "Organize Your Time," and "Sell A Mental Concept" and would like for you to send me 10 copies of this issue and bill me for them.

Thank you very much.

Very truly yours,
M. A. GLASS
Manager
SMITH-DOUGLASS CO., INC.

Wilmington, Del.

We would appreciate knowing if you can supply 50 copies of the following . . . "Organize Your Time" by O. C. Merrett.

This was noted in FARM CHEMICALS for August, 1960, pages 18–22.

GRETCHEN D. LITTLE
Technical Librarian
ATLAS POWDER COMPANY

The Management Triad

RAINFALL MAPS WANTED

Lafayette, Ind.

I am very much interested in the possibility of obtaining a copy of the U. S. rainfall probability maps for each month, which have been appearing in recent issues of FARM CHEMICALS.

I wish to make use of these maps in classroom teaching, particularly in our beginning crops, soils and my advanced under-graduate course in Agricultural Climatology . . .

Very truly yours,
JAMES E. NEWMAN
Assistant Prof. of Agr. Climatology
Department of Agronomy
PURDUE UNIVERSITY

RIEDEBURG ANNOUNCES NEW RESEARCH STUDY

Theodore Riedeburg Associates has announced a new research study on marketing, development, sales and distribution of pesticides to the agricultural field.

The report will enable manufacturers to look into, in depth, new and different avenues of farm chemicals marketing heretofore not explored, reports Theodore Riedeburg, managing director.

Titled "Today and Tomorrow in Agrichemical Marketing," the survey is available, on a limited basis, to corporations now active in the chemical processing industry. Address of the firm is 415 Lexington Avenue, New York City.

NEW NPFI MEMBERS

Eight companies have been voted into membership in the National Plant Food Institute recently, reports President Paul T. Truitt.

New members are Central Resources Corp., New York City; Crystal Chemical Co., Inc., South Sioux City, Neb.; Goodpasture Grain and Milling Co., Inc., Brownfield, Tex.; Kickapoo Valley Chemical Co., Atlanta, Ill.; Minnesota Liquid Fertilizer Co., Minneapolis, Minn.; Phinneys, Larned, Kans.; Plainsman Fertilizers, Inc., Plainview, Tex.; and Tri State Fertilizer Co., Burlington, Ia.

SYSTOX REGISTRATION

Systox, a systemic insecticide, now is registered by USDA for control of aphids and mites on tomatoes and peaches, and for aphids on peas and celery, reports Chemagro Corp., its manufacturer.

SOHIOGEN® SOLUTIONS PACE THE TREND TO HIGH-ANALYSIS FERTILIZERS

With changes coming at a startling rate in the fertilizer business, just keeping up with them can be a problem. But Sohio keeps its customers ahead of the trend to high-analysis fertilizers by tailoring solutions to the times.

Sohio specialists who work with you match your requirements from a full line of Sohiogen solutions and Sohio nitrogen materials — ammonia, ammonium nitrate, and urea — blended to a wide range of chemical and physical properties.

Technical help. The right material for your job. Johnny-on-the-spot delivery. All add up to fewer problems and lower production costs at your end of the line. Ask your "Man from Sohio" for the full story.

YOU GET THESE EXTRA ADVANTAGES WHEN YOU DEAL WITH SOHIO:

- Higher nitrogen content solutions (concentrated solutions containing less water).
- Higher fixed-to-free ratio solutions (solutions containing higher ratio of salts to ammonia).
- Development of new solutions to satisfy specific needs for higher fixed-to-free ratio solutions.
- Addition of urea to lower saturation temperatures (making it possible to use special solutions).
- Full technical assistance and service in using more solutions for production of fertilizers.
- Development of solutions adapted to preneutralization.

...we're serious about SERVICE at Sohio

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WHAT'S DOING IN THE INDUSTRY

F
C

IMC SCHEDULES FERTILIZER TRAINING CLINICS FOR FALL

A new series of fertilizer training clinics—this one featuring technical service and production problems—has been scheduled this fall by International Minerals & Chemical Corporation.

The clinics will follow the same pattern as the sales training clinics conducted by IMC last year as a feature of its Full Orbit customer service program. Those two series of 10 meetings drew more than 800 fertilizer industry representatives.

Technical and production help has been high on the list of customer requests as a natural follow-up to sales training, according to IMC officials.

Among subjects to be covered are fertilizer shrinkage, scrubbing and dust control, handling of liquids including all acids and nitrogen sources, sizing of raw materials, quality control, plant maintenance, specialty fertilizers, and supervision.

Richard G. Powell, IMC technical service manager, will take part in all 11 meetings. Neal Schenet, IMC manager of merchandising, will be moderator.

Technical service staff members from each region will be on hand for presentation of problems peculiar to their particular section of the country.

Meeting dates and sites:

Oct. 24-25	—Minneapolis (Pick-Nicollet Hotel
Oct. 26-27	—Indianapolis (Marott)
Nov. 9-10	—Baltimore (Lord Baltimore)
Nov. 14-15	—New York City (Park-Sheraton)
Nov. 16-17	—Raleigh, N. C. (Scandia Village)
Nov. 21-22	—Toledo, Ohio (Commodore Perry)
Nov. 28-29	—Winter Park, Fla., (Langford)
Nov. 30-Dec. 1	—Montgomery, Ala., (Whitley)
Dec. 5-6	—Kansas City, Mo., (Muehlebach)
Dec. 12-13	—Tyler, Tex., (Carlton)
Dec. 14-15	—Jackson, Miss., (Jacksonian)

IMPERIAL CHEMICAL MAKES NEW HERBICIDE

After six years research, Imperial Chemical Industries have announced that its scientists have succeeded in making a chemical that destroys any weeds, but is harmless to men, animals, birds and insects.

The chemical, diquat, is reported to give plants fatal indigestion when exposed to sunlight. Under tests, it had given wonderful results, but cost about $170 a pound to produce. A team of scientists was given the job of drastically cutting the cost, and early this year learned how to do it.

A plant has been built at Huddersfield, in Yorkshire, England, which will produce 50 tons of diquat before the end of September, enough to treat 100,000 acres of potatoes. Cost has been reduced to $4 a pound.

Next year, it is expected that enough will be produced to treat all the 700,000 acres of potatoes grown in Britain, with a surplus to supply part of the demand from overseas.

AMAX POTASH EXPANSIONS TO COST ALMOST $3 MILLION

American Metal Climax, Inc., will spend nearly $3 million for expansion of the Southwest Potash Corp. facilities in Carlsbad, N. M., Frank Coolbaugh, AMAX president, reports.

This will be the second expansion step taken by Southwest Potash since its mine and mill were brought into production late in 1952.

In July, the firm announced plans to build a $7 million plant in Vicksburg, Miss., employing a new process to produce nitrate of potash for the first time at prices in the range of fertilizer chemicals.

NEW USES FOR ETHION GRANTED BY USDA

USDA has approved use of ethion pesticide on peppers for the first time as well as broader application of the chemical on beans, melons and strawberries, reports Niagara Chemical Division, Food Machinery and Chemical Corp.

According to the new label claims, ethion can be used for control of these additional pests: serpentine leaf miner on peppers; lygus bug, bean leaf beetle and seed corn maggot on beans; melon leaf miner and serpentine leaf miner on melons; and strawberry leaf roller on strawberries.

Application of ethion to peppers must be on a "no-residue" basis, while a tolerance of 1 ppm is permitted on beans, melons and strawberries.

Meeting Highlights

THIS MONTH:

National Agricultural Chemicals Association 27th Annual Meeting

Hotel Del Coronado, Coronado, California

September 27. After the meeting is called to order by J. P. Ekberg, of Monsanto Chemical Co., NAC President J. V. Vernon, of Food Machinery and Chemical Corp., will address the association. Dr. Hardin B. Jones, University of California, will discuss "The Reasonable and the False Issues of Carcinogenicity;" Dr. Alfred Boyce, Citrus Experiment Station, University of California, "Pesticide Safety Makes Sense;" and Dr. Henry Van Zile Hyde, Public Health Service, U. S. Dept. of Health, Education and Welfare, "Pesticides—Vital to World Health."

Luncheon speaker is The Honorable Jamie L. Whitten, Congressman from Mississippi, on "Chemicals and the Food Supply."

During the afternoon session, a panel moderated by Jack Dreessen, of NAC Association, will discuss "Public Relations in the Sixties." Panel members are George K. Johnson, Monsanto Chemical Co.; Wally Erickson, president of the National Assn. of TV and Radio Farm Directors; John E. Pickett, California Farmer, and Donald G. Lerch, Jr., Donald Lerch, Jr. & Co.

September 28. The annual golf tournament and banquet will be held.

September 29. Committee meetings as scheduled.

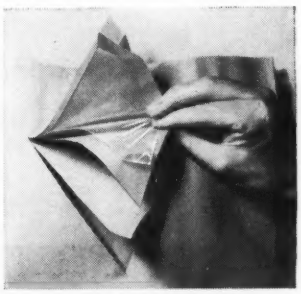
"This new CHASE POLY-PLY multiwall bag is a real Problem Solver"

Says Lee Schram, Multiwall Bag Buyer, Morton Salt Company

The Morton Salt Company needed a new and better bag for its salt shipments—a moisture-resistant bag that would be easier to handle and ship, more flexible at low temperatures, highly resistant to abrasion and rupture, yet economical in cost.

To solve this problem, Chase developed the Poly-Ply Multiwall Bag featuring an entirely new construction. It combines—for the first time—the advantages of a ply of light-weight sheet polyethylene and heavy-duty multiwall paper. It provides excellent moisture protection...extra strength...new ease of handling...flexibility even at temperatures way below zero. After six months testing under commercial conditions Morton officials report highly satisfactory results!

If you package moisture-sensitive products—such as sugar, chemicals or fertilizers—this new bag can be a problem solver for you, too. It is now available in 25-, 50- and 100-pound sizes. Call your Chase representative for full information.



New and Unique Construction: separate, intermediate ply of sheet polyethylene, shielded by heavy-duty kraft paper inside and out, assures effective moisture protection, strength and easy handling advantages.

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For production of high and ultra-high analysis fertilizers which cannot be produced with conventional materials.

The Country's Largest and most Dependable Source of Phosphate Products for High Analysis Formulations!

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WASHINGTON VIEWPOINT

▶ *Farm income may slide a little again next year, but need for chemicals is expected to be just as great. Reasons for increase far outnumber bearish arguments.*

▶ *Industry soon must pay more attention to older workers in labor recruitment. Labor Dept. says there will be fewer younger workers for the next 10 years.*

▶ *Farm credit is being eased by factors that are loosening up the tight money.*

The farm market for chemicals—particularly fertilizer—will grow larger, not smaller. Disregard talk about shrinking farm numbers, "must" drives to reduce surpluses, and consequent drastically smaller farm income that would narrow the farm market for chemicals.

Of course there is a certain amount of truth in such talk when viewed as bare facts. It is true that farms are shrinking in number, that there is almost a national obsession over farm surpluses, and that drastically smaller farm income would narrow farm markets.

But other equally bare facts overshadow these as positive market factors. Farms may be shrinking in number but are growing in size. There may or may not be an urgent need to reduce surpluses by cutting back on production but no means has been devised for doing this. Farm income may slide a little again next year but the need for chemicals will be just as great.

Reasons why farm markets for chemicals will increase far outnumber bearish arguments. The more important of these are:

1) The latest Census Bureau reports estimate the *number* of farms has fallen off an average of 15 per cent since 1954. But farm size is up 10 to 15 per cent even though acreage has declined. Larger size farms tend to buy more fertilizer.

2) Surpluses are playing a more important role in foreign policy (the cold war) than ever. This is an as yet unofficial admission that continued surpluses are necessary as long as there is a cold war. A record high of exports for this purpose under the P.L. 480 surplus disposal programs were reported for the period January 1 through June 30 of this year. A Food-for-Peace conference has been called by the White House to further widen the aims of P.L. 480 beginning September 1. Support is again growing for a national food stockpile in case of a national emergency with USDA ready to approve this time. Plans are also being readied for surplus food stockpiles at strategic places abroad.

3) The increase in the birth rate and decrease in the death rate if continued at the present rate of about 2 per cent in annual population growth should add about 80 million more people to the population in 20 years. This would reverse the downward trend in acreage to farms as food demand increased.

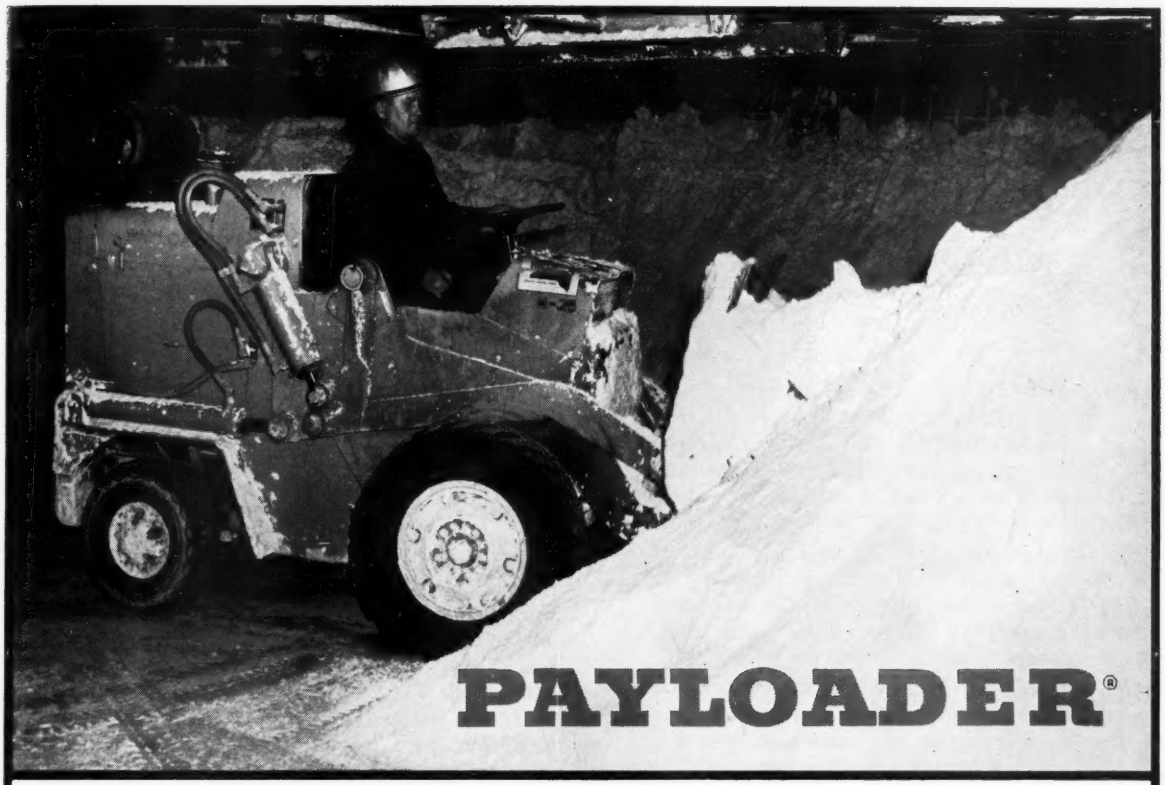
4) Tighter production controls are not possible for the next two years. The next Congress won't be geared up to start changing farm programs without long drawn-out hearings and other procrastinations any more than any other Congress. By the time a new program might be written, it would be too late in the year to take effect on 1961–62 crops. It is not certain either that a new Congress after big campaign election year promises would be in a hurry to put into effect production cutbacks that would lower farm income.

The farm chemicals industry, along with other industries, will shortly have to start paying more attention to older workers in labor recruitment programs. The U.S. Labor Department taking its latest count finds there will be appreciably fewer younger workers to learn the business for the next 10 years. Increasing business expansion calling for more educated workers is part of the reason.

But the shortage will be felt all the way up through the younger, more mature worker in the 35–44 age brackets. As workers in these brackets approach the 45–54 age range there will be only a 12 per cent increase in the 25–34 age group to replace them. The number of workers over the 45 year level will increase about 20 per cent.

Labor Department says hiring older, more experienced help can be an asset to business but more selectivity in hiring will have to be practiced. A nationwide education program sparked by Labor Department's findings will shortly be getting under way to inform business men of the new trend.

(Continued on page 12)



What users say about the H-25..

The success of the H-25 "PAYLOADER" can best be gauged by what owners and operators of this tractor-shovel say about it. Here are typical comments from users in foundry, chemical, ceramic, paper, and other industries.

Power and Capacity: "Gives nearly twice the production of our old HA's . . . good digging power and traction, fast lifting power. The most efficient we've ever used — outperforming larger loaders." "Before purchasing the H-25 we had competitive demonstrations that proved its production efficiency over other machines."

Speed and Maneuverability: "Is quicker on the lift, dump and go than the . . . . . — is more compact . . . gets into smaller places easier and faster." "Is doing a top production job. Power-steer and power-shift combination gives us maximum efficiency from both the machine and the operator."

Easy Operation: "The H-25 is a dandy with its power-steer and power-shift — gets full loads without spinning wheels and the operator lasts longer too." "I like the maneuverability and work capacity."

Reliable: "We find they stand up under tough rugged duty with minimum repairs." "The low maintenance on the H-25's has been way superior to any loader previously used. It's a real producer, easy to service." "Gives maximum production output under ideal *or* adverse conditions."

The satisfaction being delivered by the 2500-lb. capacity model H-25 is a reflection of the kind of performance built into *all* "PAYLOADER" units. There are 20 models in 8 capacity ranges — up to 12,000 lbs. operating capacity — to meet your needs, and a nearby HOUGH Distributor to serve you. He has the finest parts and service facilities, backed by factory service personnel to keep your "PAYLOADER" investment profitable.

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LIBERTYVILLE, ILLINOIS
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_____ Send "Industrial Materials Handling the 'PAYLOADER' Way"

Name _____
Title _____
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City _____ State _____

9-A-1

What's Coming Next Month

When the NAC meets in sunny California at the del Coronado Hotel Sept. 27–29, there will be continued discussion on the use of agricultural chemicals and the benefits derived by both the farmer and the consumer.

Many of you will recognize that the use of insecticides, herbicides, etc., is necessary to our economic way of life but there remains that uninformed few who persist with their rabble-rousing to the general public.

The program planned for the 27th annual meeting of the NAC will go a long way to lessen the fears that have arisen because of a few careless users.

Our NAC special issue will feature articles aimed to show the progress in research and experimentation that will further benefit the farmer and consumer.

■ CREDIT TRAINING CONT'D

Thus far we have talked about credit but now what can we do about it? We have shown you a credit budget, discussed the need for credit and presented ideas dealing with common credit practices and instruments used. F. E. Hartzler will arm you with enough information in his next article, to establish a good credit program.

Hartzler tells us that you must learn what the dealers problems are from *their* point of view; then find the program to suit the need.

■ DON'T PLAY WITH PRICE

Pricing has always been a subject of much controversy and many ways to alleviate the situation have been suggested but it still rears its ugly head.

Here is something to look forward to reading. Our Salesense author has a "hot" subject coming up and it should prove interesting to see just how he handles it.

. . . in the new

FARM CHEMICALS BPA

WASHINGTON VIEWPOINT

Internal Revenue Service is out to crack down on firms that are not paying the highway use tax. The tax must be paid on any licensed motor vehicle that has a gross weight over 26,000 pounds and is operated on public roads. Many firms have not been paying the tax in the belief that it is due only on common carrier trucks.

The penalty increases 5 per cent for each month of delay up to a maximum of 25 per cent on a tax of $150 per 1000 pounds. IRS will be checking up on violators by comparing state rolls of licensed vehicles against the tax returns for highway use by truck owners.

Juggling the official farm statistics on farm income and the definition of a farm, which some have been advocating lately, already is beginning to boomerang. The original proposals to make changes were worthy in their purpose and made openly and above board, but the end result only suggests that official statistics might be better explained but never changed.

First, a successful drive was put on to change the definition of a farm. Shrinking the number of farms statistically would raise the estimate of per capita farm income to make it more meaningful in appraising the farm market. Higher per capita farm income resulted and the picture of larger, richer farms became more clear.

But a new problem arose. When the U. S. Census Bureau is ready to announce its count of the number of farms under the new definition it will appear that farms in the U. S. will have dropped by as much as 10 per cent. This is boomeranging against those who hoped a better picture of the farm market would result. The uninformed would think the farm market had shrunk by 10 per cent.

For the farm chemical industry or any other industry the new statistics will change nothing as far as farm markets are concerned. The farm market is pretty big business no matter how you look at it, from $30 to $40 billion dollars worth depending on how you estimate the farmer's production inputs.

Farm credit is being eased by the various factors that are loosening up the tight money situation nationally. USDA's new centralization of its credit facilities will make credit to farmers more readily available. The rate of interest payable on certificates of interest issued by CCC to banks for financing 1960 price support loans dropped to 3¼ per cent from last year's 4 per cent. Credit is being eased all around, by private lending institutions as well as Federal. The Treasury earlier found it could offer investers a 25-year bond at 4¼ per cent which several months previously would not have been possible. In recent weeks the Treasury has been able to borrow for 2¼ per cent interest on short term bills. The Federal Reserve also authorized four Reserve banks to cut their discount rates from 3½ to 3 per cent with other Reserve banks expected to follow suit.

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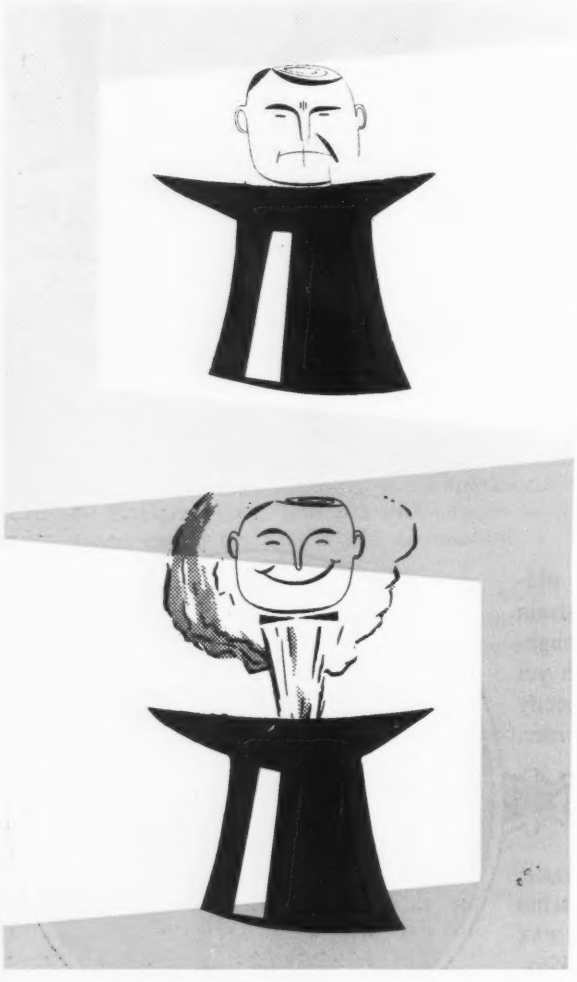
The MAGIC of ENTHUSIASM



DURING a recent visit with a friend of mine who is in the air-conditioning business, we tried to talk, but couldn't . . . the company next door to my friend was having its Monday morning sales meeting. Of all the whooping, hollering and shouting you have ever heard! In part, here is about the way this sales meeting went . . .

The sales manager said, "All right, everyone stand. Now, I want you to raise the roof of this building by saying, 'Act enthusiastic, and you'll be enthusiastic' three times. Everybody ready? O.K., let's go!"

After they went through this one time, the sales manager said, "What's the matter with you people? You act like you were dead. Now, let's do it again and this time, let's put some life into it." They went over the same words again, shouting to the top of their voices. The leader said, "Now, that's better. How many of you feel better? That's fine . . . Now let's *stay* that way."

Then the leader started around the room asking each salesman, "John, how many sales did you make last week?" It made no difference what the answer was, the leader would say, "Stand up, John, and say three times with all the enthusiasm you can muster, "I am going to double my sales this week."

After he had all 17 salesmen stand and say this, he said, "Now, let's all stand and say, 'Act enthusiastic, and you'll be enthusiastic three more times. After this was over he said, "O.K., go get them!"

My friend and I started out of his office just as the sales manager of the meeting was coming out his front door. My friend said, "There's the sales manager who was putting on the sales meeting. Would you like to meet him?"

"I sure would," I said.

After he had introduced me to him, I said, "We couldn't help hearing part of your pep meeting. I'll bet you sent those salesmen out of there on fire, didn't you?"

"I sure did," he said.

"Let me ask you this," I said, "Do you feel like that meeting will get results?"

"I certainly do. All you need to be a good salesman is a *smile, enthusiasm*, and *a product*," he said.

To win real enthusiasm from your salesmen, you must first help them "get the junk off the track" . . . the salesman who is enthusiastic must first have peace of mind.

Fifth article in FC's Salesense Series
By O. C. MERRETT

I thanked him and we walked on down the street.

Now, let's analyze this meeting.

First, was this *enthusiasm* or was it *loudness?*

Second, did this sales manager give them anything to get enthusiastic about?

Third, where does enthusiasm come from? Does it come from the outside-in or the inside-out?

Let's take the first question. I would say that this was loudness, and nothing but loudness . . . and real enthusiasm has nothing to do with loudness. You can whisper, and be enthusiastic.

SALES MEETING OR PEP MEETING?

Now for No. 2. Did the sales manager give them anything to get enthusiastic about? What's your answer? Do you think he did? My answer is "No." This was not a *sales meeting* . . . it was a *pep meeting.*

1. He didn't give them any new prospects.
2. He didn't give them any new ideas.
3. He didn't give them any new deals.
4. He didn't give them any new lines.
5. He didn't give them any information about the company.
6. He didn't ask a single salesman for any new ideas he might have.
7. He didn't congratulate a single salesman on anything he had done well.
8. He didn't ask if anyone might have a problem.
9. He didn't ask if there was any way he might be of some help.
10. He didn't pass out one single suggestion.

To answer No. 3 question, Where does enthusiasm come from? Does it come from the outside-in or the inside-out? . . . it comes from the inside-out. It's like Marion Anderson once put it, "When I sing, I try to show my heart and not my teeth."

As to the statement the sales manager made about needing only a "smile, enthusiasm and a product" to become a good salesman, I agree that they are important, but I would hate to depend on selling my product by going into a prospect's office, smiling like a Cheshire cat, jumping up and down and shouting, "Act enthusiastic, Mr. Prospect, and buy my product!" I just don't believe it would work.

Norman Vincent Peale says, "Real enthusiasm . . . not the synthetic or assumed kind . . . the enthusiasm that bubbles up from deep inner sources, is spiritual in nature."

The word "enthusiasm" is derived from two Greek words "en" and "Theos," meaning "God within you" or "full of God."

CLEAR THE TRACK

To become really enthusiastic, and stay enthusiastic, you have got to get the junk off the track.

A salesman who is worried cannot get enthusiastic and stay that way. Oh, yes, I know he can jump up and down and holler he is enthusiastic . . . but is he?

Walter Chrysler once said, "The real secret of success is enthusiasm. Yes, more than enthusiasm, I would say excitement. I like to see men get excited. When they get excited they make a success of their lives."

What can you, as a sales manager, do to get your salesmen excited? My answer is: Help them locate the junk on the track and help them get it off.

The first thing you will want to make sure of is that he likes the product and the company, and that he knows all there is to be known about his product. After you are satisfied that he *does* like the product and the company and has sufficient *product knowledge*, then find out what is bothering him.

Worry causes fear, and fear causes an inferiority complex and loss of self-confidence.

Fear defeats more salesmen than any other one thing. Fear of what? And that's where the top producing sales manager comes in . . . he finds out where the junk is, and helps clear the track.

You might think like this. Before you can answer a prospect's hidden objection, you must first get it out in the open. You can't get an unenthusiastic salesman to become enthusiastic until you find out why he's not enthusiastic . . . and it has been our experience that nine times out of ten he has some type of *worry* or *fear.*

Overstreet says, "Of all our emotional forces that pattern our behavior, fear has the most insidious way of causing us to do the things we ought not to . . . and keeping us from doing the things we ought to." So if fear is this strong, and there is no doubt in my mind that it is, can't you also see how it would kill a salesman's enthusiasm?

Here is where you come in, Mr. Sales Manager. If you want your salesmen to become enthusiastic, to get excited, and get their prospects excited . . . help release them from their fear.

You can do this by first finding out what it is they are afraid of. You can do this by letting them know that you sincerely want to help them . . . by asking them questions, and listening to their answers.

After you find out what they are afraid of . . . then find out what is causing this fear. Some of the *causes* of fear are guilt, worry, anxiety, failure, frustration, unorganized feeling, depression, fatigue, hate, anger, emotional upsets, negative thinking, pride, and lack of faith.

A salesman who is enthusiastic must first have peace of mind . . . and he can't have peace of mind if he gets sick in his stomach when he calls on a prospect,

The MAGIC of ENTHUSIASM *(Continued)*

or if he fears he will faint if he is asked to address an audience, or if he is depressed because he can't keep up with the Joneses, or if he is filled with hate for his competitor, or if some feeling of guilt is tearing at his heart.

WHAT IS THE "JUNK"?

Before your salesmen can get that burning, bubbling, lasting inner enthusiasm they must have help freeing the tracks of junk.

This junk may be:

1. A jealous wife
2. Some guilt complex
3. Money worries
4. Jealousy of other salesmen
5. Fear of customers
6. Fear of making a grammatical error
7. Fear of losing job
8. Fear of losing home
9. Fear of not being able to educate children
10. Fear of making decisions
11. Fear of becoming impotent
12. Fear of not being liked
13. Fear of criticism
14. Fear of cancer
15. Fear of not being promoted due to limited education.

Two years ago, I was teaching a company class in Alexandria, Louisiana. I was staying at the Bentley Hotel. The session was over at 10:30 P.M. and I got to my room at 11:00 P.M. When I walked in, the telephone was ringing; it was long distance. The call was from a salesman whom I had not seen for two years.

He started his conversation by telling me he was calling from New Orleans. He said he just must talk with me at once, and was leaving New Orleans by automobile right then. New Orleans is about 200 miles from Alexandria. He said he would be in Alexandria in four hours. I told him to come on, and to wake me when he arrived.

After his arrival, we had talked only 10 minutes when I knew I was not talking with the same man I had known two years previously. When I last talked to this salesman he was excited about his product, his job, his company . . . and was leading all other salesmen in sales.

Now he was scared, shaky, defeated . . . unenthusiastic about everything. He said he had completely lost faith in himself.

I suggested he start from the beginning and tell me what brought this on. He started by saying he had an appointment the next day at 10:30 A.M. with a new prospect he knew was dissatisfied with the product he was now using and wanted to make a change. He said he was actually afraid to make the call because he was afraid to sell any more.

I asked him what he meant by being afraid to sell any more. He said that about a year ago the sales manager had left his company to go with another. His company promoted the president's nephew to sales manager.

He said the new sales manager was a perfectionist. One of the first things the new sales manager did, he said, was to jump on him with both feet in front of the entire sales force about his poor table manners and sloppy grammar. He said the sales manager told him he didn't care if he was a top man, he would have to discharge him if he didn't correct these sloppy habits. He said he had never been so embarrassed and hurt in his life; that it wouldn't have been so bad if the sales manager had dressed him down in private.

He said his embarrassment turned into anger, anger into hate, hate into fear and fear into an inferiority complex. He said he was afraid to invite a customer to have lunch with him, and was afraid to sell because he feared he would make a grammatical error.

I asked him if his sales manager had suggested any help for overcoming these sloppy habits. He said no . . . he had just told him to overcome them.

I asked him what type sales meetings his sales manager ran.

He said, "The usual type . . . mostly pep meetings . . . and pointing out all the things the salesmen did wrong."

Did he ever compliment a salesman on a new account?

"No, he had the feeling that was what we were getting paid for," he said.

Time and space will not allow me to explain what happened from there on. I *can* tell you this . . . he did close the sale, and today he is back among the top salesmen . . . but the sad part is, he is not with that company; he is with the company's competitor.

The message I hope you have kept your eye on here is . . . you could have had this salesman jump up and down and holler, "Act enthusiastic and you'll be enthusiastic!" until his eyeballs fell out, and it would not have increased his inner enthusiasm one iota.

HOW TO GET REAL ENTHUSIASM

But here is something, Mr. Sales Manager, you *can* do for your salesmen that will give them a real deep enthusiasm designed to stay with them . . . not just an overnight shot in the arm: *Help them clear the track of junk.*

▶ If they have money worries, help them solve them.

▶ If they are afraid to death of some customer's asking them to hold a sales meeting, send them to some good speech course at night.

▶ If they need help in etiquette or grammar, help them get enrolled at some night school.

▶ If they are afraid, find out what they are afraid of . . . then help them overcome this fear.

▶ If some guilt complex is eating at their heart strings, suggest their seeing either a minister or a family doctor.

There are plenty of indirect ways of calling bad habits to a salesman's attention.

I hope I have not caused you to wonder whether I believe in enthusiasm, because I surely do. Someone once said, "Enthusiasm moves the world . . . Nothing great was ever achieved without enthusiasm." ▲

The Big Beef...

During the usual ten months' feeding period, a yearling steer consumes around 100 bu. of corn, a half ton of hay, and 1½ to 2 acres of Spring pasturage. The amount and nutritive value of the feed grown on the farm are important in the growth period, bringing cattle up to market weight, and the quality of the beef.

On January 1, 1960 beef cattle and calves reached a new high of 68,536,000 head on hand. During 1959 U.S. farmers marketed 44.3 million cattle and calves, for which they received a gross income of $8 billion. SUCCESSFUL FARMING farmers produced 48% of all cattle and calves sold in the U.S.—need farm chemicals to maintain soil fertility and stock health.

SUCCESSFUL FARMING farm families have substantial farms, averaging 336 acres—50% larger than in 1945. For the past decade, their estimated average cash farm income has been around 70% higher than the national farm average. They are among the best agricultural supply buyers in the world.

Farm chemical advertisers have their choice of the National Edition with more than 1,300,000 circulation among the nation's best farmers, or 24 State and Regional Editions, with circulations of 68,000 to 616,000, which permit extra push in particular markets, feature price and product, augment dealer support.

Dealers know and value the influence of SUCCESSFUL FARMING in their territory, appreciate its power and prestige, and ability to move minds and merchandise.

Whatever your farm chemicals sales problem, SUCCESSFUL FARMING should be your medium—for efficiency, economy, and proven productivity.

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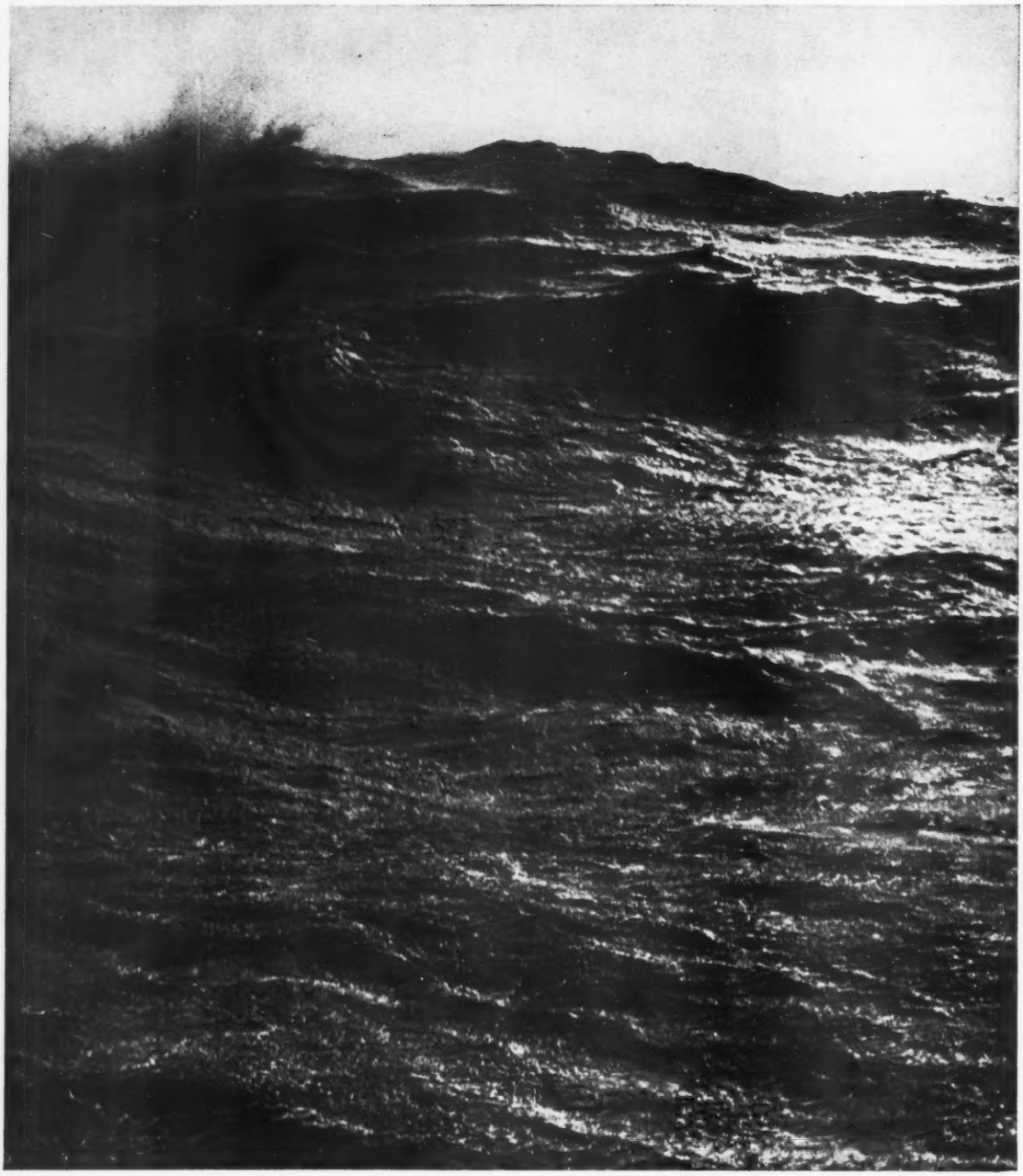

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As the first step to seeing how much better these urea prills can do the job for you, we would like to send you a sample and additional information. We are sole agents in the U.S. for Cobelaz of Belgium. It would be a pleasure to serve you. Write our nearest office for samples and a delivered price.

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ORGANIZING

for marketing

is the theme for the second annual FCMS to be

Last November in New York City, FARM CHEMICALS presented the first Marketing Seminar to be held specifically for the fertilizer and pesticide industries. The purpose of that meeting was to introduce the Modern Marketing Concept, its reason for popularity, and those functions of the marketing effort which have been recognized as being most important. This coming November 15 and 16 the second FCMS will convene with emphasis upon putting the marketing concept to work.

A TOP MANAGEMENT man from a pesticide manufacturing firm was having lunch one afternoon with another man of equal business stature. During their luncheon conversation the subject of marketing and its various aspects was discussed. At one point the gentleman who was a guest of our pesticide man stated, "This marketing concept idea makes a great deal of sense to me. As a matter of fact, we have been working on the premise of 'customer oriented' business decisions ever since we started our operation. At least, I think we have."

"Jim," our host replied, "you have expressed my feelings precisely. If I could just have some means of comparing and checking my organization against others, then I could be certain. By knowing the experiences others have had I could hold on to the best aspects of our operation, eliminating the weaker ones and replacing them with those that have been tested and proved right."

The above scraps of conversation, overheard by a member of the FARM CHEMICALS staff, were the beginning of a second FARM CHEMICALS Marketing Seminar. The date: November 15 and 16; the place: The Delmonico Hotel, New York City, New York; the title: "Organizing for Marketing Action."

A CLOSER LOOK AT THE PROGRAM

Moderating and coordinating this year's program will be a gentleman who was exceptionally well received at the 1959 Seminar, Dr. Hector Lazo, Professor of Marketing, N.Y.U. Graduate School of Business. He will briefly present the central theme of the meeting and how this theme is a natural follow-up of the 1959 program.

As moderator, his job will include coordination of topics and presentations as well as speaker introductions. In the latter capacity Dr. Lazo's first introduction will be Eugene B. Mapel, Vice President in Charge of Marketing, The Chase Manhattan Bank, New York, N. Y. The following are just a few of the items Mr. Mapel will cover in his presentation:

- The role of objectives in planning, organizing, and carrying out a marketing program;
- The necessity of carefully studying customer characteristics, habits, and needs;
- The importance of defining the objectives confronting an individual company and the types of organization needed to meet these goals; and
- The crucial need of a marketing organization for executive leadership.

EXAMPLES FROM INDUSTRY

An added feature of this year's program will be the inclusion of examples from the fertilizer and pesticide industries—examples of how the thoughts presented by such speakers as Mr. Mapel have been successfully implemented. Following Mr. Mapel and illustrating the workability of his concepts will be John L. Gillis, Vice President, Marketing, Monsanto Chemical Company, St. Louis, Mo. At the close of Mr. Gillis' talk, time has been allowed for questions from the audience in order that those points of particular interest can be discussed at greater length.

As was the case last year, luncheons for all FCMS participants are scheduled. No speeches or solicita-

ACTION

be held this November in New York City

tions. Just good food and an opportunity to meet with many of the men attending.

STANDARDS OF PERFORMANCE

The meeting will reconvene at 2 p.m. with the first presentation by Dr. Henry Bund, Vice President and Director, Division of Management Methods, The Research Institute of America, Inc., New York, N. Y. His talk centers around the goals and standards of performance for marketing—marketing's relationship to sales in terms of functional responsibility and volume versus profitability, staffing the marketing function by specialists or generalists, and the new areas of professional confidence, plus the important coordination aspect. He will wind up preceding remarks by showing how the ultimate test of success is earnings and growth.

As in the morning session, an industry example will be offered. Working with Dr. Bund will be Stuart H. Bear, General Manager, Niagara Chemical Division, Food Machinery & Chemical Corporation, Middleport, N. Y. A question and answer session will follow.

Last year, another well-received segment of the meeting was an informal reception which began at 5:30 the evening of the first day. 1959 participants found this social get-to-gether a time when ideas presented earlier in the day could be discussed informally and related more practically to the business of distributing fertilizers and pesticides. A similar reception will be included in the 1960 program.

At 9:00, the morning of November 16, Dr. Lazo will call the Seminar to order and present the first of two speakers tackling the essential area of marketing management that is concerned with:

▶ Defining the total job to be done and the individual jobs which go to make up the whole;

▶ Re-assigning and/or recruiting the right men to do those jobs; and

▶ The reasons for and methods of establishing training programs to assure that the men assigned to various tasks are prepared to adequately carry out their responsibilities. Don H. Scott of Don Scott Associates has accepted the task of covering the first two of the above subjects—while Louis Backer, also of Don Scott Associates, will present the third.

With the exception of a time allowance for questions and answers, Mr. Scott and Mr. Backer will take up the full morning.

Following luncheon, Mr. M. E. Wierenga, Vice President, California Spray-Chemical Corp., Richmond, California will show how the logical precepts presented earlier have been successfully applied to the marketing of farm chemicals.

Tying all the bits and pieces together in a meaningful whole will be Dr. Lazo who will succinctly summarize each presentation, pointing out how it goes to make up a total effort of Organizing for Marketing Action.

REGISTRATION INFORMATION

FCMS will be held Tuesday and Wednesday, November 15 and 16, at The Delmonico Hotel, Park Avenue and 59th Street, New York City, New York. To register fill out and return the form below. The fee is $40.00 per person which includes two luncheons, the informal reception, coffee and soft drink "breaks," a copy of the complete proceedings, plus additional copies at the special discount price. All hotel accommodations should be made through FARM CHEMICALS to assure preferential handling.

Hope to see you in New York November 15 and 16.

Yes, I wish to register for the 1960 FCMS, November 15 and 16, Hotel Delmonico, New York City, New York.

I understand the registration fee is $40.00 per person.

☐ Check enclosed ☐ Bill me ☐ Bill Company

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CREDIT TRAINING FOR DEALERS

By F. E. HARTZLER

The fertilizer industry, by its nature, is going to require credit. Credit is an essential and important phase of any normal business operation. These two facts were the basis for the first articles in this series. In these articles, too, the company's role in designing forms that will make the more dangerous credit risk acceptable was outlined.

NOW WE come to the most important step of all—training the dealer himself. A look at the background of the average dealer shows that he is often a farmer who went broke or an agent who decided to make some money. In either case, here is a weak point of the industry. Most of the time the industry has been good enough to run a few sales schools and the colleges have held some fine agronomy sessions; but, unfortunately, business is still business and it is not entirely encompassed by the fields of sales and agronomy.

The dealer *must* be trained. He must be trained to read a balance sheet and to know what it means. A man who cannot measure his own solvency cannot measure the credit risk that is involved by another. By the same token a man whose own credit position is shaky cannot help but feel sympathy for the farmer who is in the same boat; and a man who is not familiar with purchasing control is in danger of overbuying, having to sell at a loss, and getting himself into a cash squeeze. With good well-trained men, almost anything is possible. Without them . . . .

This credit problem has no easy answer. Let's accept that, and then see what type of training might help the dealer the most. First, to follow basic credit procedures at the retail level, he needs the credit application form mentioned previously, and direction in using it. Second, he needs a credit instrument which would cover the particular needs of the fertilizer industry. Perhaps some sort of crop lien or a mechanics lien, if the dealer applied the fertilizer, could be worked out.

With these helps in selecting and extending credit, the dealer must also understand the method of establishing terms with his customer and the procedures commonly used to collect the bill if not paid according to terms.

These then would be our first steps:

1) Review of credit needs—cash flow chart.
2) Normal trends—review of past credit records.
3) Adoption of a carrying charge commensurate with cost of handling credit and proportionate to losses.
4) Requiring a credit application on all new or any slow customers, including some sort of balance sheet.
5) Some sort of agreement with the customer as to time and amount of payment.
6) Some sort of follow-up procedure in event of non-payment.

Once dealers have training in these basic credit procedures, they will be ready to learn the use of newer credit methods such as lines of credit, revolving credit now being used by many retail concerns, or a form of straight installment credit. Any one of these could be used under the present machinery.

Once the industry begins to show a consistent use of fundamental credit instruments by trained dealers then it can go to a financial organization and begin to find ways to secure money other than relying on bank or government credit. Bank credit, as we have suggested, is limited and conservative; government credit is still considered by many farmers to be some sort of handout.

THREE PSYCHOLOGICAL PROBLEMS

However, to establish these credit procedures, there are three psychological problems to be handled. One is the idea, on the part of the dealer and the banker, that you can't send a farmer a bill without offending him. True, there are always two or three in each community to whom you cannot send a bill, but, on the other hand, ninety-eight percent recognize a bill as a standard business practice. REA, most oil companies,

The most important step—training the dealer himself—is begun in this part of FC's credit series. There are many things that industry can do . . . educating customers, developing good credit procedures, begin developing a good long-range credit plan.

your local LP gas dealer if he is still in business, and Sears and Roebuck will confirm this.

Another psychological problem is that the dealer, because of his farm background (and usually it is the background of a poor farmer), feels a great deal of sympathy for the farmer. If you are the manufacturer, you will find, likely, that he has no sympathy with your position at all. The dealer feels sorry for the poor farmer. That is, he does until he winds up broke, then he hates them and the manufacturer, too.

BE PREPARED TO HANDLE COMPLAINTS

A dealer probably will lose some customers when he starts sending bills. He will lose about three or four percent of them. However, it will be the three or four percent that he should have lost anyhow, and he will find that they come back after a while. When he first starts sending statements, the dealer should be prepared to handle complaints. One LP gas firm uses either a very big man or a very pretty girl to handle them. Either one seems to do very well, but there are fewer complaints with a pretty girl in the office.

The other psychological problem is the farmer's attitude. The farmer has been told for so long that everybody is getting rich off of his poor bleeding body that he believes it. Of course the truth of the matter is that the farmer makes a higher net on his sales than almost any line of retail business. He has to because in most cases he is getting only one turn. He simply cannot believe that a retail merchant will operate on two to six percent net profit. It might be a real good idea for the industry to point out to some of the future agriculture teachers just how short a margin a retail business operates on, and put on some sort of campaign to enlighten the future farmers as to just how tough things can get.

I am always a little surprised, and secretly delighted, to watch the change in attitude toward farmers, as a farmer becomes a dealer and realizes that you don't get rich. But the farm attitude toward business profits is not only unrealistic but regretable.

The farmer also has the idea of forty years ago that he should be privileged to pay when he wants to. This is nice, but he is the only person in the world that can claim this particular privilege. No one else can anymore. If he wants time and money, he will simply have to pay for it. Now what he does not realize is that forty years ago he did pay for it. Transportation was short, very short, and so the local merchant could put a good price on his merchandise. He had to.

Actually among the things that the industry might do would be to set up an educational program to inform farmers about credit. For many of them it would be their salvation and their way to a good profit if they could learn to use credit intelligently instead of abusing it. Credit flows to good credit customers and shuns the poor ones. In hard times the supply of farm credit could dwindle dangerously, because of poor past performance.

WHAT CAN INDUSTRY DO?

This may have been a little rough, but it was intended to be. The industry has credit problems; and it should have credit problems. These are the things that the industry should do.

▶ Educate the customers as to what credit and a good credit rating can do for them. Show them that there are terms other than bank terms, and organizations that will take chances that banks won't take. This may also loosen up the banks.

▶ Develop in the home office some good credit procedures and then set up a good dealer training program, so that the dealer can do this sort of thing.

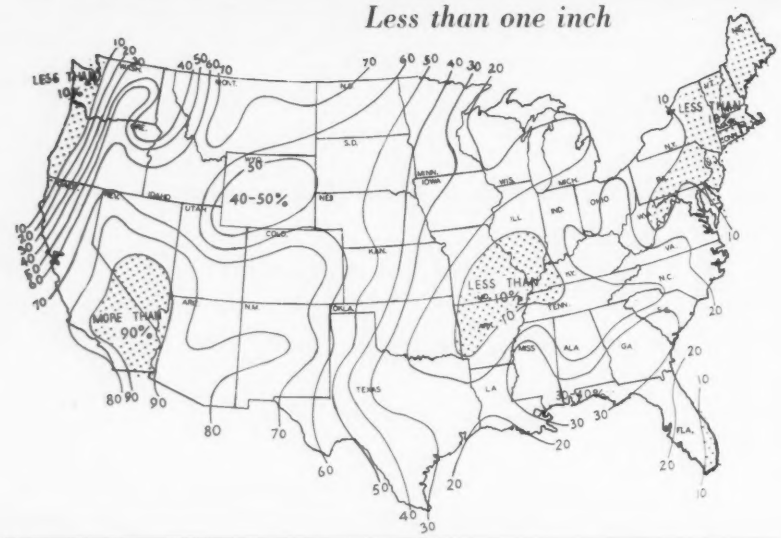
▶ Set up a couple of traveling auditors or credit managers who can be of real help to a dealer in getting his own books in order and help to establish good credit policies.

▶ Begin to develop a good long range credit plan that is attractive to private capital and private finance. If you can develop a good credit history, financing is not hard to secure. A poor credit history scares everyone.

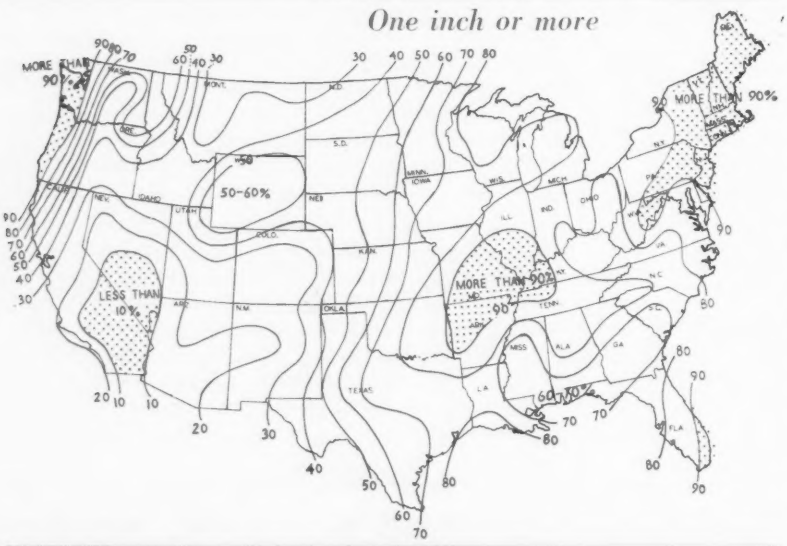
▶ In short—stop farming and get into business. ▲

october RAINFALL

Less than one inch



One inch or more



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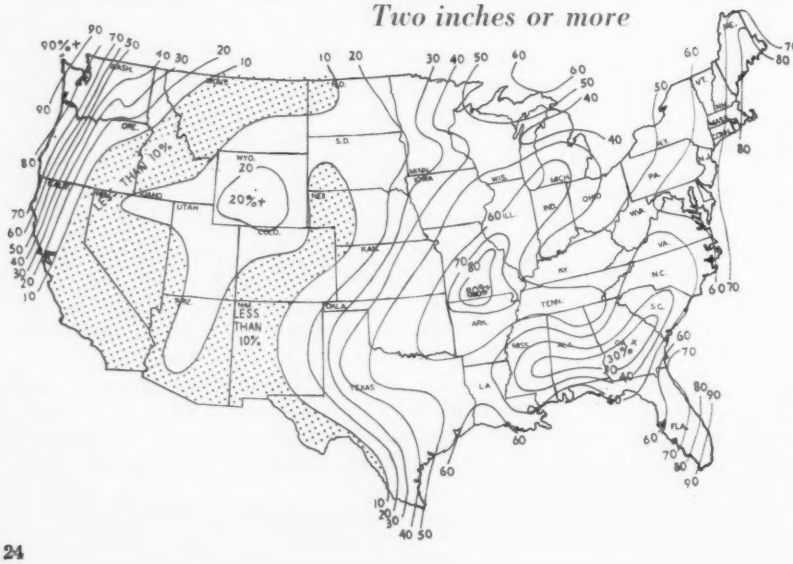


FC concludes its exclusive weather service for the industry

By VAUGHN HAVENS

THESE maps show the chances of receiving various amounts of rainfall in October. The lines connect points of equal rainfall probability which can be readily converted into the odds in favor of or against receiving the indicated monthly rainfall total. For example, 70 per cent probability represents the likelihood of occurrence of that amount of rainfall or more 70 times out of 100, or 7 times out of 10. Or putting it another way, the chances of receiving an October rainfall total less than the indicated amount are 3 in 10, or a 30 per cent probability.

This information is not a weather forecast in the usual sense. Although forecasts for a month or more are often attempted, their accuracy at present is quite limited. If an attempt is made to use such a forecast for planning purposes, it may be more harmful than helpful, since the user has no indication of the confidence which he can place in the forecast, and thus no way of judging the risk of a planning error due to an erroneous forecast.

HOW TO USE THE MAPS

The use of these maps for obtaining a quantitative estimate of October rainfall risks is illustrated by the following examples. Suppose you are planning certain activities for the area around the Louisiana coast which would be adversely effected only if October in this area were very wet, say 5 inches or more. A glance at the

october RAINFALL

5 inches or more map shows that this area lies between the 10 per cent and 20 per cent lines indicating that in October southern Louisiana will be this wet in only 1 or 2 years out of ten. Or supposing you have plans for the coastal areas of Oregon and Washington which would be seriously hampered if October turned out to be unusually dry. A glance at the less than 1 inch map indicates a risk of less than 10 per cent for this area. In other words, the odds in favor of 1 inch or more are better than 9 to 1.

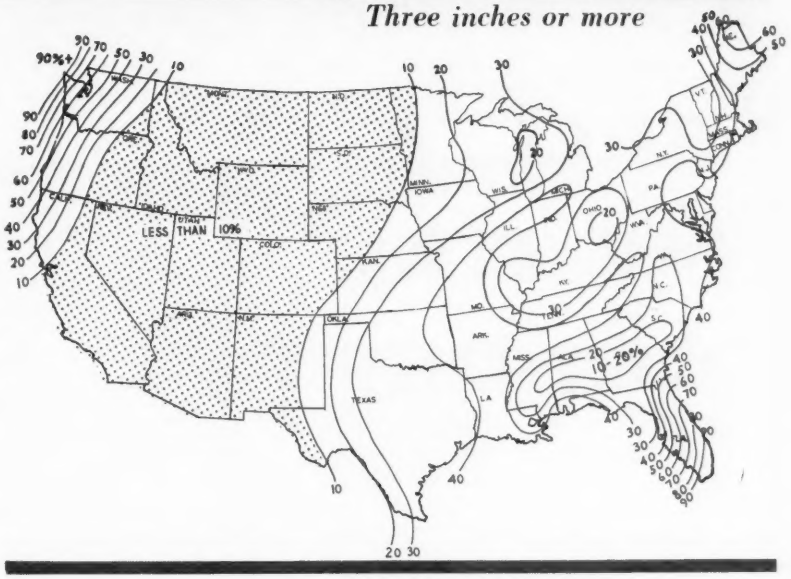
HOW THE MAPS WERE PREPARED

Thirty years of October rainfall records for more than 200 U. S. Weather Bureau stations were used in the preparation of these maps. Thus a total of more than 6000 October rainfall records from every part of the U. S. mainland had to be analyzed. The period of years used was 1928 through 1957 in all but a few cases. In order to highlight the major features of the rainfall distribution and eliminate minor variations, a certain amount of smoothing of the data was required. For this reason, and particularly in mountainous areas, the maps should be used with caution since differences in elevation and exposure to the prevailing winds can sometimes cause large differences in rainfall between nearby locations.

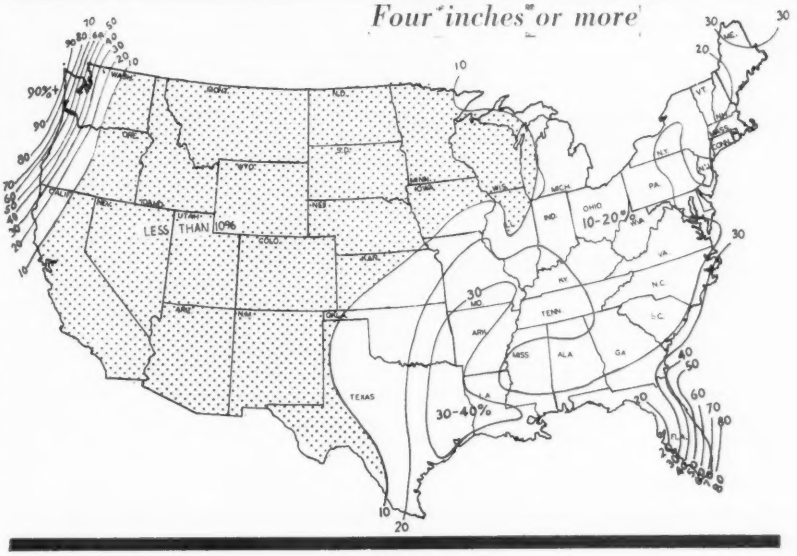
Some of the irregularity which characterized the summer maps in this series is still present in October, particularly in the southern part of the country. This is largely due to spotty, local showers and thunderstorms. On the other hand, the crowded lines in the northwestern part of the country indicate the end of the summer dry season and the approach of the rainy season in this area.

These maps are an example of the use of past weather records for estimating future weather risks, the only reliable way at present to use weather information for planning more than a few days in advance. Of course, day-to-day plans should always be made with the aid of the latest weather broadcasts. ▲

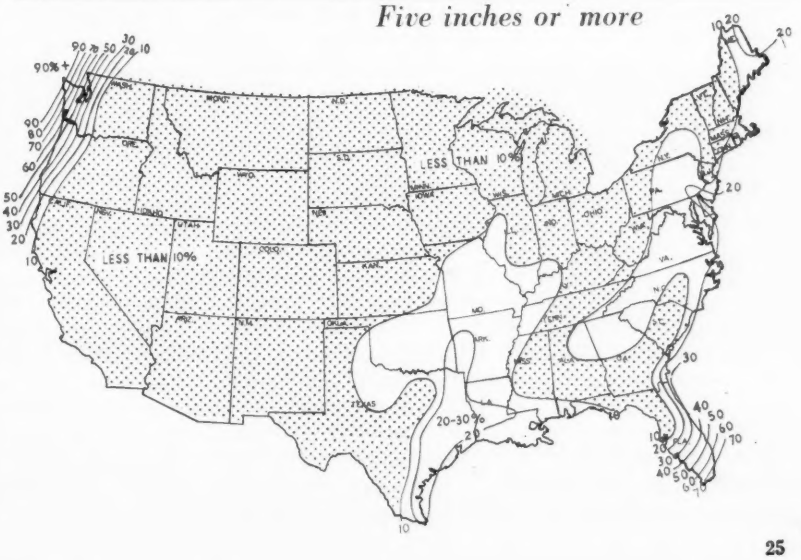
Three inches or more



Four inches or more



Five inches or more



MARKETING

SELL A MENTAL CONCEPT

By RALPH EVERETT

A prospective buyer will pay you untold sums of money for good ideas and not one red cent for the product you have to sell. What he buys, in reality, is not the product you sell but a Mental Concept *of what your product will do for him. Will it make him happier? Will it save him time? Will it make him more popular? Will it save him embarrassment? Will it make him more efficient? Will he be recognized as an authority?*

You don't sell fertilizer! You sell mental concepts of what your prospect can get from the *USE* of your fertilizer in the form of a soil fertility program. Electric companies manufacture light bulbs but they don't sell light bulbs. They sell better eyesight . . . less eyestrain . . . beauty in the room. Cadillac makes automobiles but they don't sell automobiles. They sell the concept of "Brother, you have *arrived* when you can drive a Cadillac." People don't want to buy typewriters. They want distinctive looking letters, ease of operation . . . a mental concept of what the typewriter will do for them.

You manufacture one thing but you sell another. Pick up any magazine and study the advertisements for a few minutes. Yes, pick up the farm magazines and look at the tractor manufacturers who are competing against you for the farmer's dollar, and I might add, rather successfully. Do they tell the farmer how many pounds of scrap iron were mixed with the pig iron in the process of making the steel frame of the tractor? *They do not!* They picture the ease of operation, the tremendous power of the drawbar. Why, the farmer can literally feel that surge of power and the soft ride over the hard ground long before he sits on that tractor seat.

Suppose you were selling foundation garments to women . . . corsets to you men. Would you tell the lady how many ounces of lead were in the zipper or how many miles of cotton yarn made up the garment? Not if you wanted to make a sale. You'd draw a mental picture of how the most inexpensive cotton dress pulled over this magic garment would make men's eyes turn as she walked down the street and how her husband would take renewed interest. Then you'd make a sale!

When you translate what you manufacture into terms of human wants and desires, you make a sale. When you repeat this process over and over again, you make a profit. To sell a MENTAL CONCEPT it must be rooted in fact but dressed in drama.

Mr. American Farmer is not interested in how many ounces of sulfur or manganese you put into a ton of your fertilizer. What he really wants to know is what you can do for him in terms of what he wants to buy and he wants to hear about it. He not only wants to hear about it. He wants to picture it in his mind and he needs your help in developing this picture.

Mr. American Farmer wants a mental picture of your entire soil fertility plan and everything it will mean to him. If the right man comes along with a well thought out *Soil Fertility Plan* which will help him achieve his goals and ambitions, you can bet your sweet life he will give it just as much consideration as a farm machinery plan, an irrigation plan or any other mental concept presented to him in a well thought out merchandising plan.

SOIL FERTILITY PLAN

A soil fertility plan can be complicated or simple. I like to think of it in its simplest terms. I like to ask myself, "How can a soil fertility plan be broken down into steps which can be easily explained in terms of what motivates Mr. American Farmer?" To me it involves four fundamental steps:

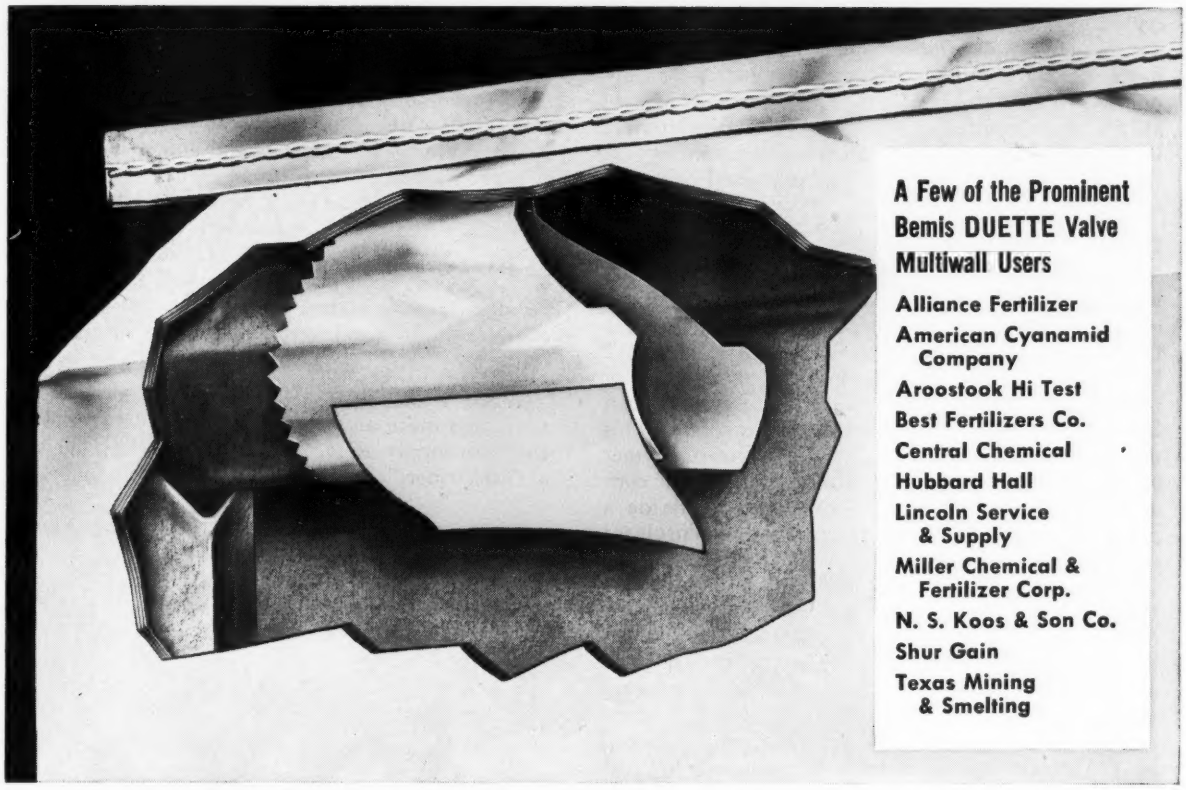
- A preliminary survey to determine needs.
- A personal planting recommendation based on fact.
- Inspection and consultation during the growing season.
- Proof of results at harvest time.

A preliminary survey to determine plant food needs requires something more than a soil test for nitrogen, phosphorus and potash. Soil scientists tell me that soil testing, in itself, doesn't answer all the questions for determining the correct nutrient requirements. A preliminary survey to determine needs should include such items as the organic condition of the soil, the cropping history of the particular field, previous yields, the factors which contributed to crop loss and many, many more facts. How can these factors be determined? By guessing? I think not! This takes a trained dealer or salesman to get this job done!

The second step is a correct analysis of the nutrient requirements based on facts found in the preliminary survey. Subsequently, it means a personalized recommendation plan drawn up for the prospect with his name on the jacket so it really means something to him. Parenthetically, how many of you attach real importance to your personalized life insurance estate

Conclusion of a paper presented at the National Plant Food Institute Annual Meeting, June 12-15 in White Sulphur Springs, W. Va.

Bemis Duette® Sewn Multiwall Sleeve Valves Have Been Experience-Proved

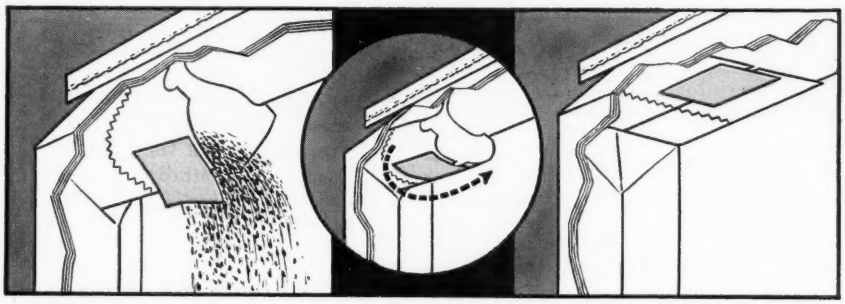


A Few of the Prominent Bemis DUETTE Valve Multiwall Users

- Alliance Fertilizer
- American Cyanamid Company
- Aroostook Hi Test
- Best Fertilizers Co.
- Central Chemical
- Hubbard Hall
- Lincoln Service & Supply
- Miller Chemical & Fertilizer Corp.
- N. S. Koos & Son Co.
- Shur Gain
- Texas Mining & Smelting

It's been more than three years since Bemis perfected the DUETTE, the multiwall bag valve-on-a-valve that gives double sift protection for granular, pelletized or pulverized products.

In that time, DUETTE Multiwalls have been used by many of the leading chemical and fertilizer manufacturers, with consistently gratifying results. The diagrammatic pictures show why . . .



WON'T CLOG . . . The Magic Yellow check flap falls freely aside from the valve slit. The sleeve won't choke or clog the packing spout.

POSITIVE CLOSING ACTION . . . This diagrammatic picture shows the action as the Magic Yellow flap starts to close over the valve slit.

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SELL A MENTAL CONCEPT

(Continued)

plan? Is Mr. American Farmer any different? How do you think he will react when he receives a personalized recommendation folder with a map of his fields and the specific nutrient recommendations pinpointed to each field? He'll react even more favorably if your dealer or salesman makes an appointment to discuss his personalized soil fertility plan. Again, this can only be accomplished by a trained dealer or salesman.

THE PERSONALIZED PLAN

The personalized soil fertility plan is just started when the crops are planted and start to grow. A good crop consultant will inspect the plants at regular intervals for hidden hunger signs, insects which might be present, disease just starting, weeds which may need control or any other recommendations which can be made to insure high yields at low cost. This doesn't mean simply asking Mr. American Farmer as he comes into the dealer's store, "How's your corn doing?" It means getting into an automobile on a planned schedule to make out written crop consultant reports on the growing crop.

The man *who really cares* doesn't stop with making the right recommendations and checking the crops during the growing season. He will make certain that he has the facts at harvest time in the form of yield checks to convince other Mr. American Farmers for the next season that his soil fertility plan is as good as he says it is. Then he'll have CONVICTION and he can create DESIRE in other prospects for the following growing season. (*August issue, page 24.*)

In some areas of the country, application rates are too low to afford this kind of servicing. But many farm leaders have awakened to the value of fertilizer and what a good soil fertility plan can mean to them. Around every community are certain farm leaders who can understand the value of such a soil fertility plan. These farm leaders are using enough fertilizer to justify this kind of service. There may be only a half dozen such farm leaders around a dealer point but the list will grow and grow and grow if your dealer is trained to sell a good soil fertility plan and follow it to completion.

In other sections of the country where high application rates are an accepted practice farmers frequently split their purchases among as many as three or four brands. Here again, a properly administered soil fertility plan is not feasible unless the tonnage per farmer is high enough to justify the necessary services. I know of no other way of convincing and motivating Mr. American Farmer than for your dealers or salesmen to *earn* 100% of his purchases through the presentation and application of a soil fertility plan.

It seems to me that in all forms of agricultural selling that we've got to stop thinking in terms of a crop year. *We must start thinking in terms of ten year production periods . . . in terms of a farmer's career . . . not just this year or next but in terms of a production career.* Any intelligent farmer will tell you he can't build soil fertility in terms of one or two years any more than he can build a herd of cows in one or two years. The farmer knows it takes year after year of proper management to improve the fertility value of his farm.

I'd like to pose the question to you, "Does your sales force and dealer group have the vision to project themselves ten years into the future?" In fact, you might ask yourself the same question. Can your dealer group or sales force sit down with a farmer and talk intelligently in terms of Mr. American Farmer's *career* or are they so anxious and hungry for an order that they forsake the truly rewarding aspects of selling? Has your dealer group or salesman been trained to qualify prospective customers as to (1) *Capital* available to grow and prosper? (2) Character to stick with a soil fertility plan even though the going may be rough for one or two crop years? (3) The mental *capacity* to put a soil fertility plan into effect?

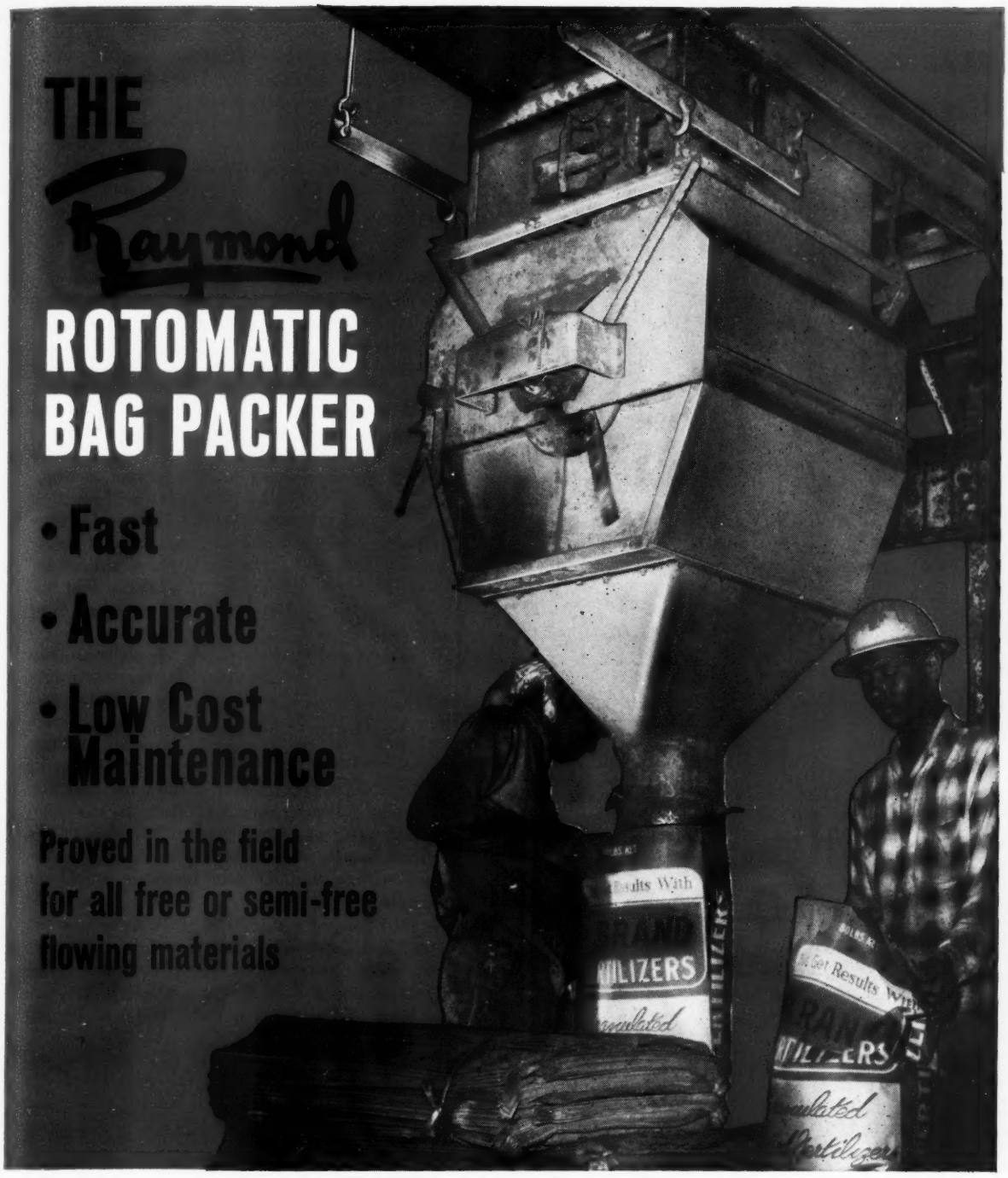
THE SACK RIDER

When I first started selling to farmers twenty years ago quite an appropriate name was coined for the farm supply dealer of those days. He was termed a "sack rider." In his place of business one could

find conveniently located feed sacks with nicely rounded indentations which had been carefully molded over many months to fit the posterior portions of the dealer and his customers. He was the type of business man who kept his records on check stubs or on the back of match covers. He frequently wasn't very scrupulous in his dealings with his farm customers. Any sense of responsibility in seeing that his farm customers made money from the fertilizer or feed they bought from him was out of the question so far as he was concerned. Incidentally, I understand there are still a few "sack riders" around but I can assure you they won't last long.

THE PEDDLER

In tune with the "sack rider" of those days was the old time peddler. He was the one wise type of individual representing a manufacturer. He worked strictly on commission and he was proud of it. In the fall or spring he would call on the "sack riders" in his territory with a "hot" booking of feed or fertilizer, price guaranteed against decline. The "sack



That's right! Speed, Accuracy and low-cost maintenance . . . proven in full production line operation. It's the Bag Packer that can give you new economy in your bag packing operation. The Raymond Rotomatic Packer is fully automatic, all mechanical, and requires no outside motivation such as electricity or compressed air. It is gravity operated and uses the even balance scale principle to deliver proved accuracy. Get complete details now from your Raymond representative or write

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SELL A MENTAL CONCEPT

(Continued)

rider" would give the peddler a list of his competitor's best customers with the parting farewell, "Sell those people and I'll book a carload with you." The peddler went down the road high pressuring, cajoling, making outrageous promises until he had sold a carload. When he had finished his work in one town he moved on to the next to repeat the same procedure

over and over again. He too, never gave a thought as to whether the farm supplies he was selling would make the farmer money. He was selling a product . . . not a plan . . . so why bother?

After World War II the American Farmer began to change and along with that change he forced changes in the distribution of farm supplies. These changes are upon us whether we like it or not.

No longer can the farm supply dealer remain a "sack rider" with no interest in the farmer and his profits. Today, this man is a business man with Mr. American Farmer's interest at heart. In order to remain in business during the next ten years this man must make up his mind that he will *earn* the farmer's business or the farmer will turn elsewhere for his purchases. He will discover that his farm supply business must represent a dollar volume much larger than his largest farm customers. Otherwise, his farm customers will turn to another form of purchasing. This man will learn that he must provide the services necessary to sell a soil fertility plan or someone . . . somehow . . . will replace him. Someone else . . . somehow . . . will learn how to satisfy these wants of fertilizer, feed, seed, irrigation systems, farm machinery in the way Mr. American Farmer demands.

And along with this new type farm supply dealer we will see the business man plant food salesman. He will be a man with a vision of the farmers' cares. He will be able to teach, train and inspire his dealer group to sell a soil fertility plan. He will be the type of man who can follow a soil fertility plan through to completion. He will more than likely be a trained agronomist but he will only use his technical knowledge when it is absolutely necessary. He will not flaunt his technical knowledge in an attempt to demonstrate his brilliance. He will be a master at public relations and sales promotion. He will be a good public speaker who can sell people in groups. Just like the farmer who runs his farm on a business basis, this man will handle his territory, his dealers (if he sells through dealers) on the business philosophy of selling a soil fertility plan which means money for Mr. American Farmer and every other chain in the distribution link.

SELL YOUR OWN CUSTOMERS

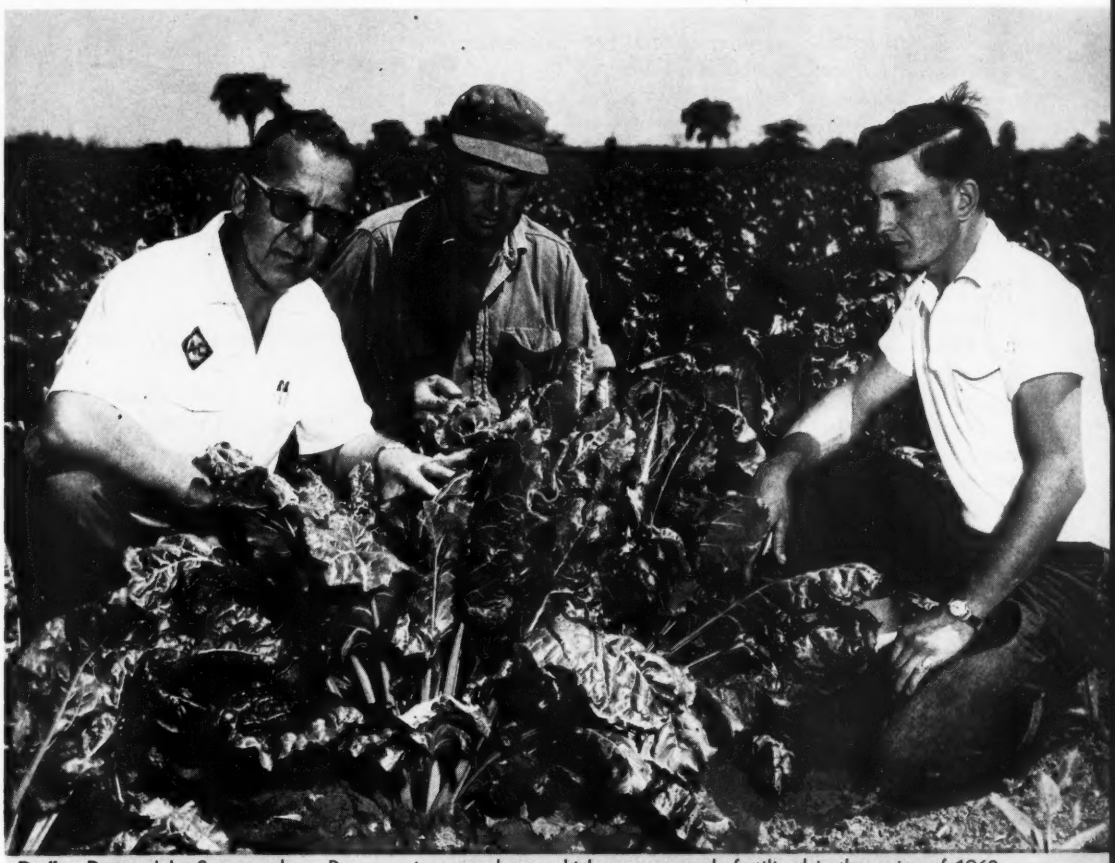
It is inevitable that as revolutions in manufacturing and distribution take place there is bound to be effects on selling principles and methods. No longer can we expect a built-in farm market not subject to change. It doesn't take a crystal ball to determine that we will have fewer and larger farmers. We know these farmers will demand, and receive, the type of service we have been discussing. True, these changes won't occur all at once but just as certain as night follows day someone . . . somehow . . . will see that the Mr. Farmers of America receive the service they demand and deserve. I am going to suggest something which, at first thought, may sound ridiculous. When you think it over, however, I believe you will agree with me that it has merit. Learn to sell your own customers.

I believe sincerely that any farm supply manufacturer could double his volume with commensurate better profits if he would learn how to sell his own customers. This is true whether you sell through dealers or sell direct to farmers. If you sell through dealers you have the job of qualifying and selecting those dealers with the Capital, Character and Capacity to grow and progress. Certainly, in the years to come you will have fewer dealers but you will be able to spend more time with the smaller group because they will be moving your fertilizer in volume with your soil fertility plan. Likewise, if you sell direct to farmers and you qualify them as to Capital, Character and Capacity to grow and progress you will have fewer customers but your volume will increase because you will be selling a soil fertility plan.

It has been said that "The only time you are not busy meeting competition is when you are creating it." I'd like to challenge you to develop your soil fertility plan. Secondly, select the customers you want to participate in the plan and thirdly, go out and create the CONVICTION & DESIRE necessary to carry the plan to completion.

As in all things, there is a way . . . Chinese philosophers called it the "Tao" (pronounced dow) . . . a key to realizing the opportunities that lie ahead. Some companies will find and use the key; others, unfortunately, will not.

With the mastery of production techniques behind us, the battleground becomes one of distribution and flow. Starting in the 1950's, many manufacturers began to realize that the road to bigger profits is paved with more dynamic sales and marketing techniques. Certain companies observed the handwriting on the wall and threw themselves into building keener marketing and distribution . . . others chose to wait. The time for waiting has grown short. ▲



Dudley Potter, John Sarver and son Don, examine sugar beets which were properly fertilized in the spring of 1960.

Agronomic Selling Yields PROFITS

IMPORTANCE of a sound crop production information program to increase sales and to keep customers is borne out by the success achieved by the Potter Implement Company of Bowling Green, Ohio.

Dudley Potter, an "agronomically-oriented" dealer in fertilizer and farm equipment, was interviewed recently by FARM CHEMICALS on the merits of this type of selling program.

"It is only with the help of the producers furnishing the dealer with agronomists and sales personnel skillfully trained in their field can the dealer hope to cope with the many problems that arise," said Potter.

How long have you been in the fertilizer business? Were you in any other business before this?

This is our sixth season in fertilizer distribution. Yes, we have been in the farm equipment business since 1949. Before that I had worked for several large retail sales organizations.

Why did you get into the Ammonia business?

We saw the possibility of increased yields and a better return on the investment of fertilizer for our customers which in turn would increase their earnings per acre. With a better net per acre the farmer would be in a much better position for new equipment and necessary replacement of obsolete equipment.

Did you start in the mixed fertilizer business at the same time?

No, we started mixed fertilizer operations two years later.

Do you feel qualified to recommend a program to your farm customers?

I believe that we are qualified to recommend a fertility and crop program because of our past experience plus the help we have received from qualified agronomists. In the past six years we have made the acquaintance of a number of agronomists which I value very highly. Without their help we would not have been able to be of as much assistance to our customers. If we have a problem, I am in the position to ask the customer for a day of grace so that I can

PROMOTION (*Continued*)

get in touch with an agronomist and get his answer. This we have always been able to do.

Do you recommend soil tests?

Yes. Very definitely.

If recommendations come back from a college do you modify them any?

Yes, because we are in a position to get the history plus the yields the farmers desire.

What if the soil conditions are not suited for NH_3. What do you recommend?

Solid material. The only place in which we have a problem is a small area containing limestone.

Do you think demonstration plots are valuable in selling your program?

Yes, but the distributor must be present at harvest and during the growing period to point out the advantages of our program.

What is your main source of information?

My main source of information would be company agronomists and salesmen. Other sources include the AAI, NPFI, and farm publications.

What is the function of your supplier agronomist or salesman?

I think we have been very fortunate that the people who call on us, salesmen and agronomists, have been very helpful in solving our problems, and spending time with our farmer customers either with group meetings or on-the-farm assistance.

You do think the supplier salesman should help you then as a source of reliable authentic information?

Very definitely—he must be qualified in his field—not just a peddler, but a salesman.

As I understand it, you show your customer how he can make more money through using your product in his crop production program and you expect your suppliers to do the same for you. Is this true?

Yes. We must have a sound economical program with the suppliers being a part of it.

Doesn't it take considerable money to carry on such a program? Can you justify it based on the low returns generally associated with handling of fertilizer?

Yes it does, and it is necessary for us to spend considerable extra time and effort to get information so that we are well informed as to changing practices and experiments so that our recommendations are found on fact, not theory. Taking these factors into consideration, however, we are still getting a fair return on our products.

HOW THE PROGRAM INCREASED VOLUME

If you have a breakdown of your costs, then you also must know how the program that you're selling has helped you. Would you mind giving a concrete example either in dollar volume or tonnage which could be attributed to such a program?

I do not care to divulge our tonnage but I will give it to you this way. We moved X tonnage in 1955; in 1956 we doubled 1955. In 1957 we doubled 1956. In 1958 we had an increase of approximately 10% over 1957 but due to excessive rain we only delivered about 50% of what we had sold. In 1959 we had

Wendell Creps and his father, Lloyd Creps, discuss a soil fertility plan with Dudley Potter.

225% increase over 1958. Now in 1960 we are fighting the weather again.

Would you hazard a guess what would have been the results without such a program?

Yes I would. Without a sound program we would have been out of business because our competition would have curtailed our sales with promiscuous statements and stories. Furthermore our customers have sold us a lot of tonnage by recommending our program to their friends.

Couldn't you lower the price and sell more?

Yes we could lower our price and sell more, but then you get into the law of diminishing returns and go broke on volume.

THE FARMER WILL PAY FOR RESULTS

You believe then that the price must be competitive within reason—but if the farmers can be assured of results they will go for this more than a saving of a few dollars a ton?

The farmer craves for this information and he is willing to pay a fair price providing he gets the return. He also knows that you have to make a profit to stay in business.

Do you depend on your local ag teachers or county agent to sell your product for you?

We depend on them to educate our customers to the best of their ability but it is up to us to sell.

They are a good source of information and you keep them acquainted with your program and you keep informed of their recommendations. In other words, you complement each other's activities—is this true?

Yes and we have also found that our farmers have requested them to get in touch with us for specific recommendations or problems. At times it has been necessary for us to get in touch with a salesman or an agronomist before we could give an answer.

In summary, would you outline the reasons for your apparent success and perhaps suggest who you think should supply you with information and help in selling such a program?

Hard work and untiring effort, because when we got into the NH_3 business we got hold of something much larger than we anticipated. Then it was a case of getting all the information we could from the salesmen and the agronomists and humbly telling them we needed help if we are to survive. Let me say that they all have been 100% cooperative and without them . . . who knows? So thanks to the manufacturers for their help in providing this type of personnel. ▲

Johnny Unitas demonstrates newest H&W high-strength packaging paper . . .

EXPANDA-KRAFT

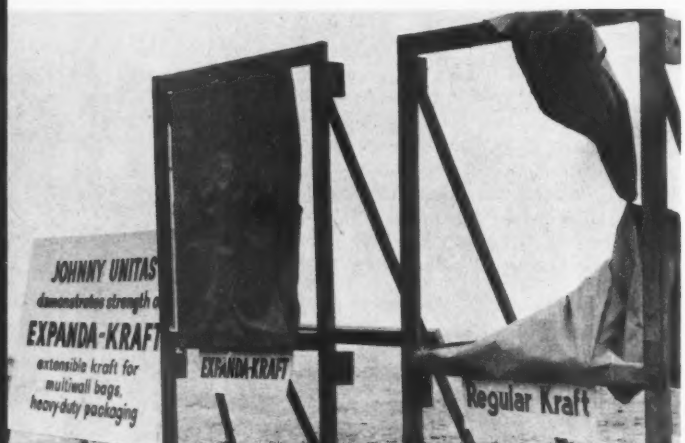
THE GREAT NEW NAME IN EXTENSIBLE KRAFT

THIS AD IS PRINTED ON EXPANDA-KRAFT WHITE

You can also buy Expanda-Kraft
in Semi-Bleached or Natural. Imagine how attractive *your product*
would look, packaged in Expanda-Kraft.
To learn how well your product can be *protected* by Expanda-Kraft, see other side . . .

EXPANDA-KRAFT

DEFIES SHOCK!



The bullet passes of Johnny Unitas have the terrific impact to rip through regular kraft (above), yet, thrown at the same speed, they bounce off Expanda-Kraft because of its greater resiliency (left). Johnny Unitas, all-pro quarterback of the Baltimore Colts, demonstrated the toughness of Expanda-Kraft at the National Packaging Show in Atlantic City. Each target consisted of four plies of 50-lb. basis weight stock. Time after time, in standard drop tests, bags made of Expanda-Kraft have proved their superior strength.

Expanda-Kraft is the winner in impact test against regular kraft. Bags of each type were filled with sand, suspended on long ropes, sent hurtling toward each other. Regular kraft bag, photographed at high-speed as it burst, had same ply construction as Expanda-Kraft bag.

EXPANDA-KRAFT REDUCES BREAKAGE It has *two-way stretch*, soaks up shocks that would break ordinary kraft of equal basis weight.

EXPANDA-KRAFT WITHSTANDS MOISTURE *High humidity* and *weathering* have little effect on Expanda-Kraft! It retains its full toughness and firmness.

EXPANDA-KRAFT PRINTS SHARP This advertisement is printed on 50-lb. Expanda-Kraft White from a regular production run. Other shades print as well to enhance sales appeal.

EXPANDA-KRAFT BAGS STACK SECURELY They have a coefficient of friction higher than regular kraft bags, stack with less risk of slippage, stay in place while in transit.

EXPANDA-KRAFT BAGS FILL FAST They meet required porosity standards, yet are rigid enough to stand up to high speeds on the filling line.

HOLLINGSWORTH & WHITNEY DIVISION OF
SCOTT PAPER COMPANY

CONTACT YOUR MULTIWALL BAG SUPPLIER for information on the use of Expanda-Kraft where rigidity, resilience, strength, moisture resistance and uniformity are required. Expanda-Kraft is made by a new roll-crepe process and is available to multiwall bag manufacturers in 40, 50, 60, 70 and 80-lb. basis weights; White, Semi-bleached or Natural. *Hollingsworth & Whitney, Division of Scott Paper Company, Dept. G, Chester, Pa.*

READER SERVICE

FREE INFORMATION to help you solve fertilizer, pesticide problems

Chemicals

268—"FMC CHEMICALS"

Food Machinery and Chemical Corp. reports availability of a catalog of all its chemical products. Entitled "FMC Chemicals," the 36-page two-color brochure lists the firm's chemicals alphabetically, with physical data and uses. Copies of the product list can be obtained by

CIRCLING 268 ON SERVICE CARD

269—HET ACID

A new, 12-page technical bulletin describing HET Acid has just been issued by Hooker Chemical Corp. The bulletin presents newly developed, useful information on this versatile chemical which, as a dibasic acid possessing over 54 per cent of its weight of stable chlorine, is especially suitable for making chlorine containing resinous products that show an unusually high degree of fire resistance. Suggested uses outlined are as a chemical intermediate for manufacture of various metal salts used as driers for paints, varnishes and inks; fungicides; herbicides; and insecticides. Copies are available by

CIRCLING 269 ON SERVICE CARD

270—TITANIUM TETRACHLORIDE

An illustrated 16-page brochure outlining properties and handling procedures for titanium tetrachloride has been released by Columbia-Southern Chemical Corp. Contents include physical properties, a typical analysis, materials for loading, unloading and storing, precautions in handling and temperature charts on viscosity, specific gravity, surface tension and vapor pressure. Copies are available by

CIRCLING 270 ON SERVICE CARD

271—PENNSALT'S PRODUCTS

"Pennsalt's Products—Where They Come From, How They're Made" is the title of a brochure available from Pennsalt Chemicals. A chart traces development of typical Pennsalt products from the basic raw materials, through intermediate products and processes, to the final product sold to customers in almost every industry you can name. To receive your copy,

CIRCLE 271 ON SERVICE CARD

272—BUTONATE

Wisconsin Alumni Research Foundation reports development of butonate, reported to be unique in having these properties: Residual action against insects, low toxicity to mammals, nonstaining, inoffensive odor, soluble in most organic solvents and compatible with nonalkaline insecticides and fungicides. A cholinesterase inhibitor, butonate may be formulated as an oil spray, aerosol, emulsion, wettable powder or dust. Chemically, the insecticide is an organic phosphate—0,0-dimethyl 2,2,2-trichloro-1-n-butyryloxyethyl phosphonate. Additional information is available. Just

CIRCLE 272 ON SERVICE CARD

273—SILICONES & CPI

Now available from Dow Corning Corp. is a new manual, "How Silicones Work for the CPI." It describes silicones for the chemical process industries, cites how various forms of silicones help design, process and maintenance engineers expand capacity, cut costs, lower maintenance, reduce downtime, increase reliability and improve job conditions. Included is information about many silicones—from antifoamers to foamers, from adhesives to abhesives, from water repellents to dust filters. The new "processing aid" is available without charge. Just

CIRCLE 273 ON SERVICE CARD

274—AQUA-Z

Collier Carbon and Chemical Corp. is marketing and distributing a new nitrogen and zinc fertilizer, under the name Brea Brand Aqua-Z. Collier has added zinc as a minor element to its aqua ammonia. Extensive field testing, the company said, has indicated that zinc is the most widespread micro-nutrient deficiency in western states, and that next to nitrogen, zinc is more generally deficient than any other element. A special technical service report describing the nature of zinc deficiencies and how they may be recognized is available by

CIRCLING 274 ON SERVICE CARD

275—MILLER "658"

Diseases on potatoes, tomatoes, cucurbits, peanuts, citrus, avocados, azaleas and turf are controlled with Miller "658" Fungicide, the company reports. Miller Chemical & Fertilizer Corp. is the exclusive licensee for "658", developed by Union Carbide. A copper-zinc-chromate complex, "658" fungicide has provided excellent results for growers and in agricultural experiment stations, according to Miller. For complete information,

CIRCLE 275 ON SERVICE CARD

Process Equipment

276—CONTINUOUS PROCESSING

A revised 16-page brochure, "Continuous Processing," illustrates and lists distinguishing characteristics and applications of 55 types of continuous processing equipment manufactured by Dorr-Oliver Inc. Included is equipment for agitation, classification, centrifuging, pumping, fluidization and ion-exchange. Pilot plant equipment also is described. Obtain your copy by

CIRCLING 276 ON SERVICE CARD

277—LEVEL CONTROL

Fail-safe operation is insured with a new electronic material-level control, reports Flo-Tronics, Inc., which developed the control to determine presence or absence of material at a desired level in a bin, hopper, storage tank or similar container. Called the Model L-400 Flo-Level, the device can be used for material level surveillance and control or for quantity measurement in processing and storage containers. It is especially suited for use with powdery or granular products, the company said. For additional information

CIRCLE 277 ON SERVICE CARD

278—PROCESS EQUIPT. CATALOG

Patterson-Kelley Co., Inc., says its new bulletin contains product description and specifications on the complete line of laboratory and production blenders, vacuum tumble dryers, packaged pilot plants, process heat exchangers, a new Solids-Processor and general-purpose solids-flow valve. Also described is organization and operation of the company's Pre-Test laboratory, which tests customer formulations and helps to determine proper blending equipment and correct blending procedures. For a free copy, just

CIRCLE 278 ON SERVICE CARD

279—FERTILIZER PLANT BULLETIN

A new brochure, illustrated with photographs of existing plants, describes the Carlile process for production of wet process phosphoric acid and ammonium phosphate fertilizers, including diammonium. Plant construction utilizes sec-

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See pages 56, 57 and 58 for information on these Reader Service numbers:

293—The Aroclor Compounds
294—Continuous Weighing System
295—Bulk Feed Bodies
296—Besler Ball Valves
297—Hough's H-30
298—Centrifugal Mixer
299—Micro Flow Valve
300—Collapsible Container

tionalized design. Schematic flow diagrams show the step-by-step production of phosphoric acid and ammonium phosphate for fertilizers, including complex fertilizers. Plants described in the text range in capacities from 30 tons per day of P_2O_5 to 200 tons per day and from five tons per hour of high analysis ammonium phosphate to 25 tons per hour. Obtain your copy by

CIRCLING 279 ON SERVICE CARD

Materials Handling

280—PLASTIC TANKS

Metalweld Inc. reports its Kabe-O-Rap Tanks are corrosion resistant, reinforced plastic tanks for use in the chemical and allied industries. They consist of a fiberglass reinforced plastic tank shell which is helically wound with stainless steel cable. The tank is designed so that while the plastic contains the liquid, the hoop stresses are carried by the cable. For details,

CIRCLE 280 ON SERVICE CARD

281—WEIGHING ATTACHMENT

In-transit weighing of loads by fork trucks, and elimination of the need for weighing loads at platform scales is reported possible with a new electronic weighing attachment from Clark Equipment Co. A new catalog illustrates and describes the Model A-5 Baldwin-Clark weighing attachment for fork trucks. Illustrated in two colors, it explains design and step-by-step operation of the attachment. To get a copy,

CIRCLE 281 ON SERVICE CARD

282—STORAGE TANKS

Introduction of polyethylene storage tanks in the 500 gallon capacity range has been announced by Delaware Barrel & Drum Co. Several styles are available: Full open head, closed head with openings, flat or conical bottoms. The manufacturer says that extensive field testing and on-location experience show no outer support is needed. For details,

CIRCLE 282 ON SERVICE CARD

Application Equipment

283—BOOM EXTENSION FOR AGR. SPRAYERS

Announcement of a new spray nozzle has been made by Delavan Mfg. Co. Sold under the trade name Delavan BX, these tips are designed to offer additional coverage for spray booms at flow rates consistent with standard boom nozzles. They are available from 5 GPA through 10 GPA. Manufactured as both a single and double nozzle, the BX offers additional coverage ranging from 68" to 104" for single nozzles and from 153" to 194" for double nozzles when both are placed at 30" boom height. Complete information is available. Simply

CIRCLE 283 ON SERVICE CARD

284—AIR CARRIER SPRAYING HANDBOOK

A practical handbook telling how to get best results from air carrier spraying in orchards and row and field crops, is offered without charge or obligation by Besler Corp. Besler says this is not a sales booklet. Among subjects covered: How to spray in cross winds and in head and tail winds; fighting frost with an air sprayer; how night spraying differs; why outside rows need special attention; how to select an air carrier sprayer for particular conditions; importance of spray droplet size; spraying on muddy ground, and many others. For your free copy

CIRCLE 284 ON SERVICE CARD

Miscellaneous

285—LUBRICATION

Sun Oil Co. has published a technical bulletin describing a new semifluid extreme-pressure lubricant. It includes complete information on Sun Prestige 740A-EP, discussing characteristics, uses, and typical specification data. Stating that Prestige 740A-EP is designed for better lubrication, and to reduce leakage in old enclosed gear cases, the bulletin points out that the lubricant can be used in small-line centralized lubrication systems where stiff greases are unsuitable. Obtain your copy by

CIRCLING 285 ON SERVICE CARD

286—SNELL BOOKLET ON "HAZARDS"

A new booklet discussing the measurement, detection, correction and litigation of casualty, fire, pollution and product-liability hazards has been released by Foster D. Snell, Inc. The booklet stresses prevention of these hazards by means of plant appraisals, precautionary labeling, toxicological testing, etc. It also emphasizes the need for promptly calling in an expert in the investigation of industrial accidents when a mishap occurs, for any delay may occasion the loss of key pieces of evidence needed in labor litigation. Copies are available by

CIRCLING 286 ON SERVICE CARD

287—SOIL TEST OUTFITS

Two new catalogs on Simplex soil test outfits and other soil testing equipment have been prepared by The Edwards Laboratory. One catalog, "Simplex Soil Test Outfits" describes and illustrates the Simplex Complete, Junior and Farm soil test outfits and Soiltex. The other catalog, "Simplex Soil Testing Accessories" lists 10 accessories ranging from soil thermometer to moisture meter. They are "free for the asking"—just

CIRCLE 287 ON SERVICE CARD

288—RESPIRATOR EQUIPT. SELECTOR TABLE

An industrial gas mask canister selector table, using 62 most common industrial gas and vapor hazards, is included in the latest Willson flyer on its respiratory protection equipment. Opposite each hazard are listed recommended canister, color guide, Bureau of Mines approval where applicable. The flyer shows the firm's full line of respiratory equipment. For your copy, simply

CIRCLE 288 ON SERVICE CARD

289—CATALOG FOR PROCESS INDUSTRIES

"General American Services and Products for the Process Industries" is the title of a new 20 page catalog from General American Transportation Corp. Covered are GATX tank cars, GACX Airslide cars, GACX Dry-Flo cars, custom fabrication, field erection, tank storage terminals, mixing devices, Louisville dryers, and plastics molding. For your free copy,

CIRCLE 289 ON SERVICE CARD

290—FARM EQUIPMENT

A pictorial presentation of Allis-Chalmers line of farm equipment is included in a new booklet from the company. Two "pocket-size" booklets describe planters and cultivators. In addition to action photos, there are also many illustrations of attachments available to increase versatility of each unit. To receive your copies of these booklets, simply

CIRCLE 290 ON SERVICE CARD

291—ACME MASKS DESCRIBED

Two booklets available from Acme Protection Equipment Co.: "Useful Information for Users of Insecticides and Fumigants" and "How to Select a Gas Mask." The first illustrates masks for protection against organic phosphates, fumigants, etc., and describes care and maintenance of masks. The second booklet points out some of the things to consider in selecting the facepiece that will assure a secure fit, safety and acceptance by employees. Copies are free. Simply

CIRCLE 291 ON SERVICE CARD

292—PRETESTED LAB APPARATUS

Publication of a bulletin describing services to the petroleum, petrochemical and chemical industries has been announced by the Standards Div., United States Testing Co. The division says it provides industry with a dependable source of laboratory equipment subjected to 100 per cent inspection and testing before delivery. For your copy,

CIRCLE 292 ON SERVICE CARD

As Cyanamid's "walking giant" scoops away overburden covering a rich phosphate deposit, the surveyor plans a system that will handle the huge amount of water needed to make slurry and move it to washing and grading plants

HIS BUSINESS IS MAKING YOUR BUSINESS BETTER

Like all the men and women in Cyanamid's phosphate operation, his only business is phosphates for your mixed fertilizers

He's one of several hundred Cyanamid people who mine, process, research, deliver and service phosphatic materials for your acidulation and mixed fertilizer business. These people put Cyanamid's more than 40 years of phosphate experience into the kind of products and services you can use. Take advantage of both. Pick up your phone and call your Cyanamid representative.

Services you can use

Traffic Service: Cyanamid traffic specialists are ready to route and ship your orders without delays. Their knowledge can save you money and can make your operation run even more efficiently.

Technical Service: Cyanamid's staff of technical experts are on 24-hour alert. Often, what are new problems to you are solved problems to them. Make your formulation and production problems theirs. That's their job.

Sales Service: Cyanamid sales representatives are available to work with and for you in expanding present markets or in establishing new markets.

Products that serve: Cyanamid's only phosphate business is mining and manufacturing the highest quality products for your mixed fertilizer requirements.

- Florida Natural Phosphate Rock.
- TREBO-PHOS® — Triple Superphosphate.
- Phosphoric acid for acidulation.

To manufacture fertilizers that sell . . . mix with Cyanamid's phosphates and service.

American Cyanamid Company, Agricultural Division, N. Y. 20, N. Y. ®*TREBO-PHOS is American Cyanamid Company's trademark for its triple superphosphate.*

CYANAMID

PHOSPHATE PRODUCTS

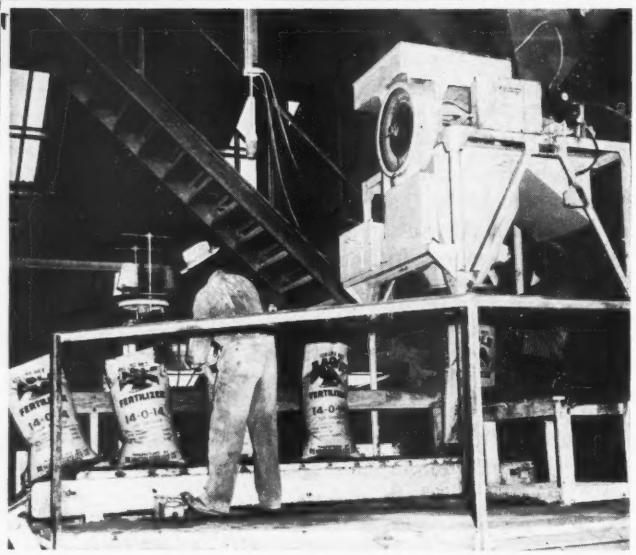
CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

MATERIALS HANDLING
CUSTOM APPLICATION

Although they had been operating on a highly competent basis in competition with others in their area, Wilmington Fertilizer Company was motivated to even greater efficiency last year.

A FIRE spurred us to n

Front end of the storage and bagging section of Wilmington Fertilizer Co.'s plant, water tower and conveyor belt between mixing and storage.



The Union I&C bagger and sewing head installation at Wilmington Fertilizer is capable of bagging 70 tons per hour.

to more efficiency

By T. E. FRESTON

NECESSITY born of fierce competition underlies much of U. S. industry's modern efficiency. This is especially true in the fertilizer industry at Wilmington, North Carolina, where large plants of half a dozen major producers are located.

Thus it was that fire, which could have proven disastrous, merely spurred the management of Wilmington Fertilizer Company to even greater efficiency.

The company had been operating on a highly efficient scale in competition with others in the vicinity when fire destroyed a large section of the plant, including a portion of its bagging and loading equipment and storage building, on May 15, 1959. Thus, there was a heavy capital outlay involved at a time when materials and labor were high.

This company realized that its future in the fertilizer business depended largely upon its ability to compete on a cost basis within the industry. They therefore charted a course along the lines of a high production unit. A minimum labor force, no product rehandling, and continuous flow of material through the plant were essential elements in their plan.

LABOR-SAVING TECHNIQUES USED

Company officials felt that the labor situation, rather than improving, would become more costly and complicated in the future. They further believed that the future would bring a critical shortage in transient labor. For these reasons, the company decided to incorporate every available labor reducing technique in its rebuilding operation.

Bulk handling conveyors were installed to carry material directly from the manufacturing unit to any position within the plant. Built-in interchange conveyors were used to transfer bulk materials from one storage location to another.

A major problem remained, however, in the engineering of this new operation. It was concerned with transferring the cured bulk material into a customer package and on to either rail or truck shipping facilities. The company's requirements here were extensive. It needed high production, accurate, versatile equipment, low in cost and requiring minimum labor and maintenance. Since it was required to pack sizes varying from 50-lbs. to 200-lbs. in both burlap and paper bags and in both rail and truck conveyors as well, Wilmington's problem became even more complex.

At this point, George Sloan, Jr., plant superintendent, called in representatives of Union Bag-Camp Paper Corporation's package engineering department, and together they designed an installation capable of fulfilling these requirements. They also looked to possible future improvements such as automatic bag hanging and reversible conveyors direct to the trucks. All plans for installation of equipment were made in such a way that these improvements could be added later without modifying the basic design and location of their present facilities.

SELECTING THE BAGGER

The Union I & C Bagger was selected because of its high tonnage capabilities and excellent weight tolerances. Due to extensive time delays caused by sewing twine breakage, Wilmington selected the Union reversible sewing stand which permits sewing heads to be changed in a matter of seconds.

At present, this operation is capable of bagging 70 tons per hour with one man hanging bags, one man sewing and five hand truckers delivering the product to the truck. Ultimately, they plan to install automatic conveying equipment which will further reduce manufacturing cost.

From the mixing plant a 600-foot conveyor system carries the fertilizer to the new warehouse and deposits the material in the proper bins. The whole operation of the company is as nearly automatic as is practical today, Sloan pointed out.

While the firm is 75 years old it has gone through several reorganizations, the most recent and effective of which was in 1949. The company's progressive attitude and drive dates from that time. Herman Hayden, Sr., Executive Vice President, heads the company in Wilmington, having been instrumental in its reorganization. The plant is located along the Northeast Cape Fear River and is one of the largest businesses within the city limits.

In the last ten years, Wilmington Fertilizer has grown from a small firm to one of the larger independents in the industry. If the efficiency of its present operation is any barometer, it seems certain to achieve even a greater growth in the future. ▲

PEST REPORTS

*By Kelvin Dorward**

BY THE latter part of July, populations of the European corn borer were increasing rapidly in some areas. The borer was quite heavy on more advanced corn in the southeastern area of South Dakota where there was an average infestation of 93 per cent and a count of 259 borers per 100 plants. In Richland and Cass counties, North Dakota, the larvae were first and second instar and averaged 236 per 100 plants. Infestations appeared several times greater than those experienced in 1959. The highest counts in Minnesota were from the southwestern district where the counts averaged 199 borers per 100 plants.

By mid-July treatment for the European corn borer was underway in many areas of Nebraska. Infestations in some areas of the state were up to 100 per cent. Damage to late-season corn by the second-generation borer in Illinois is expected to be more severe than in 1959. In general, populations may increase noticeably over last year. In Jefferson county, Kansas, a survey of 24 cornfields showed 67 per cent of the fields infested. Ten per cent of the stalks had borers with an average population of 16 per 100 stalks in the infested fields. The annual first-brood survey in Iowa showed an average of 41 per cent of the corn plants infested. These infestations averaged 66 borers per 100 plants. It is expected that the southern two-thirds of the state will have a moderate second brood on late corn. In the Wooster and Lima, Ohio areas, the borer severely attacked sweet corn; and in the west central and northwestern areas of the state, damage was much heavier than at the same time in 1959.

Populations of the European corn borer were recorded as being moderate to heavy in Massachusetts during mid-July. In Virginia, unusually heavy damage to corn, potatoes and tomato vines and some flower plants was reported; and infestations were heavy in commercial sweet corn in Carroll county, Maryland. The borer heavily infested some corn in Yadkin county, North Carolina, and attacked grain sorghum in the Tennessee valley of Alabama.

The ***spotted alfalfa aphid,*** which until July had caused very little concern, developed rather rapidly during the month in some areas. Populations of the insect had been generally light in Stanislaus county, California, until the latter part of July when hot weather caused a rapid increase with some fields becoming severely infested. In the Imperial valley of Imperial county, California, populations ranged from light to severe. The aphid began a noticeable increase in the Yuma area of Arizona during early July and by the middle of the month infestations were heavy in most areas of the state with considerable damage being recorded in many fields.

The ***boll weevil,*** by the latter part of July, was becoming serious in some cotton areas. Damage by the weevil was heavy in areas of North Carolina where overwintering populations were high and early treatments were not followed. Heavy rains in some areas of the state made the problem more serious. The weevil was on the increase in South Carolina with infested fields in the south central area showing 70–80 per cent infestations. Several Piedmont counties had fields losing half of the squares to weevils. Counts of squares in middle and south Georgia showed an average of 19 per cent infested with the range being 0–84. There was also an increase of boll weevil infestations throughout most areas of Alabama. Among the northern counties the highest infestation was 60 per cent in Madison county.

Boll weevil activity was on the increase in west Tennessee where in the southern part of the area punctured square counts averaged 25 per cent. Although weevils were present in all areas of the Mississippi Delta, infestation counts remained low. Average infestation of inspected fields in Louisiana in late July was 13 per cent while counts varied widely in Arkansas and ranged from 0–17 in Missouri. In Oklahoma the overall average was approximately 10 per cent. In Texas the weevil continued to be a serious threat in the southern, eastern and central areas.

Bollworms caused concern in several cotton-growing areas during July. By the latter part of the month the insect had increased to a point where it was expected to become a threat in all cotton fields. In many areas of South Carolina the rapidly increasing damage by bollworms was causing more concern than injury from any other cotton pest. Damage to squares and young bolls was general throughout the state with the heaviest being in the lower Coastal Plains and Piedmont areas. The potential damage in the state appeared to be greater than any previous year.

In middle and southern Georgia bollworm egg counts during the latter part of the month showed an average of 53 per 100 terminals and the larval count 9 per 100 terminals. Although, earlier in July, there had been a decrease in bollworm infestations in Alabama, by the last of the month an increase was noted throughout the state. Bollworm moth flights were on the increase in Mississippi, but eggs and larvae were not showing a proportionate increase. The insect continued to be a serious threat in southeastern and central Texas and was building up to economic populations in a few isolated areas of southern Oklahoma. Infestations were increasing to damaging numbers in some fields of the Mesa, Arizona area.

The finding of the ***Mexican bean beetle*** in backyard gardens at Jerome, Jerome county, Idaho, during late July is of particular interest. As of July 29, the insect was found to be infesting 80 gardens but no populations have been found in commercial or contract bean fields surrounding Jerome. This is the only known infestation of the insect in Idaho and upon its discovery immediate eradication efforts were undertaken. Infested plants within the city limits were burned and all other plots treated with insecticides. ▲

* *Chief Staff Officer, Survey & Detection Operations, Plant Pest Control Div., Agricultural Research Service, USDA.*

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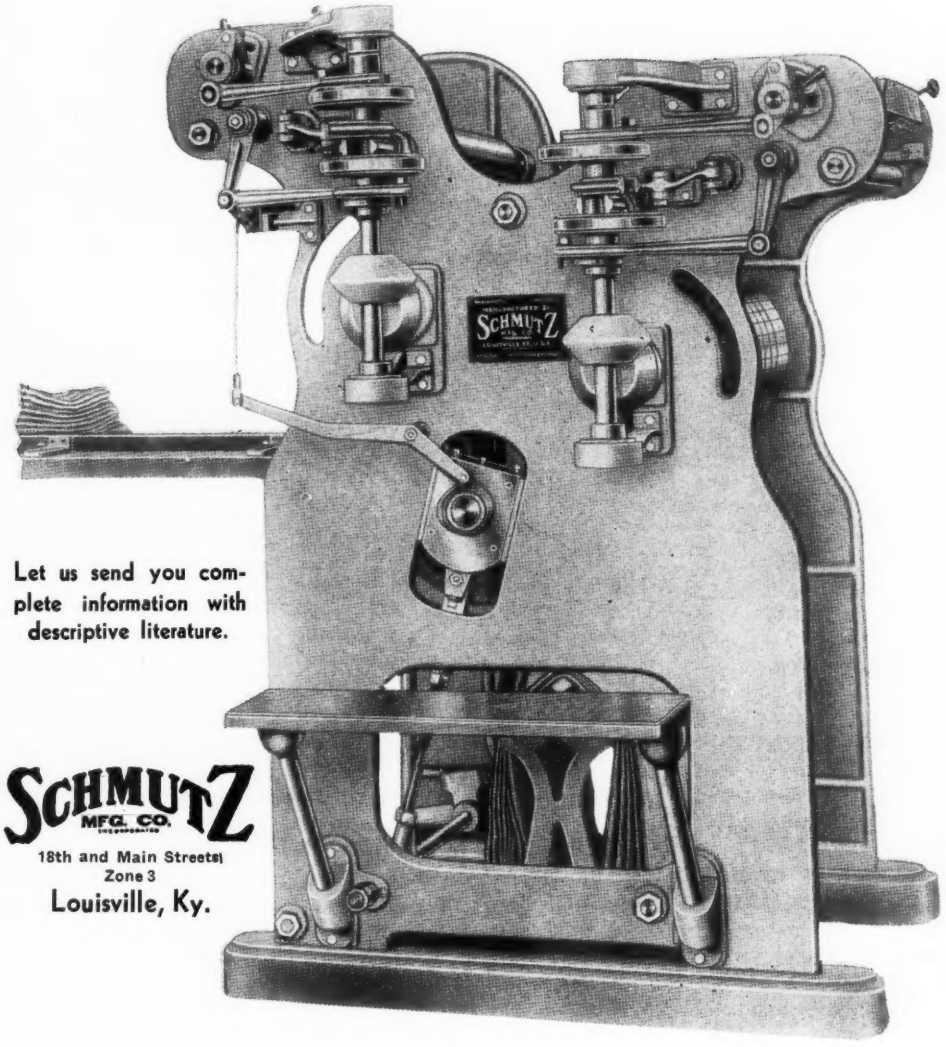

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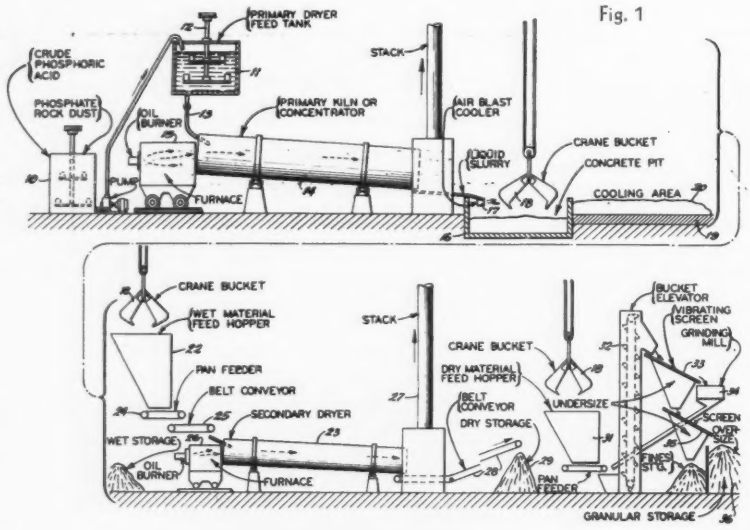
PATENT REVIEWS

By Dr. Melvin Nord

Fig. 1



Production of Granular Triple Super

U. S. 2,937,937, issued May 24, 1960 to Frank Dunbar and assigned to Armour & Co., describes a process for producing triple superphosphate in a shorter time interval, in granular form, and of high quality as to mechanical and chemical condition.

As shown in Fig. 1, phosphoric acid and phosphate rock dust are placed in a tank *10* and agitated. The thin slurry resulting from the above mixture is pumped to a feed tank *11*, which may be equipped with continuous agitating mechanism *12*, and from this tank the mixture is fed through valve control pipe *13* to the firing end of a rotary kiln *14* heated by an oil-fired furnace *15*. The slurry is discharged from the kiln *14* into a concrete pit *16*, and may be dispersed and cooled by a blast of air from the pipe *17* as it is discharged into the pit.

After remaining in the pit or den for the desired length of time, but before the material is set to a solid condition, it is removed from the pit by an overhead crane *18* and spread over a concrete floor *19*. Good results are obtained when the material is removed from the pit after about 8 to 22 hours. When removed, it is sufficiently fluid or semi-solid to form a covering *20* over the floor, and there it sets to a solid condition.

The material, which now forms a solid mass, is removed by a crane bucket *18* and deposited in a feed hopper *22* for the secondary dryer *23*. Because of the sticky condition of the mud material, it is preferred to employ a pan feeder *24* and a belt conveyor *25* to tend to disintegrate the material and to transfer it with a uniform feed to the firing end of the secondary dryer *23*. This dryer may also be provided with an oil furnace *26* similar to furnace *15*. Each of the kilns or dryers *23* and *14* is provided with stacks *27*. A belt conveyor *28* is employed for removing the dried material from the secondary dryer *23* and for forming a pile *29*.

The triple superphosphate discharged from the secondary dryer *23* may be taken by the conveyor belt *28* to storage, where it may remain for four hours or longer. From the storage pile *29* it is removed by crane bucket *18* and deposited in a feed hopper *31* for a screening and grinding unit. In this unit, a bucket conveyor *32* feeds the triple superphosphate to a vibrating screen *33*. The oversize on this screen goes to a grinding mill *34* and is then returned to the boot of the elevator *32* to mix with the incoming feed. The undersize from the screen *33* goes to a screen *35* below, and the sized granular product goes directly to storage in pile *36* for shipment. The undersize material, or fines *37*, goes to fines storage, or may be reused in the process.

PESTICIDES

U. S. 2,931,755, issued April 5, 1960 to Gail H. Birum and assigned to Monsanto Chemical Co., discloses a composition which is effective against insects and fungi, consisting of an inert carrier and as the essential effective ingredient a phosphorothioate of the formula

$$RO—\overset{\overset{O}{\|}}{\underset{\underset{OR}{|}}{P}}—SCH^{cl}_2$$

where R is alkyl or haloalkyl (1–8 carbon atoms).

U. S. 2,934,420, issued April 26, 1960 to Richard S. Cook and W. E. Craig, assigned to Rohm & Haas Co., discloses a composition adapted to control fungi, mites, insects, and undesirable plant growth, consisting of β-selenocyanoethyl cinnamate mixed with an adjuvant.

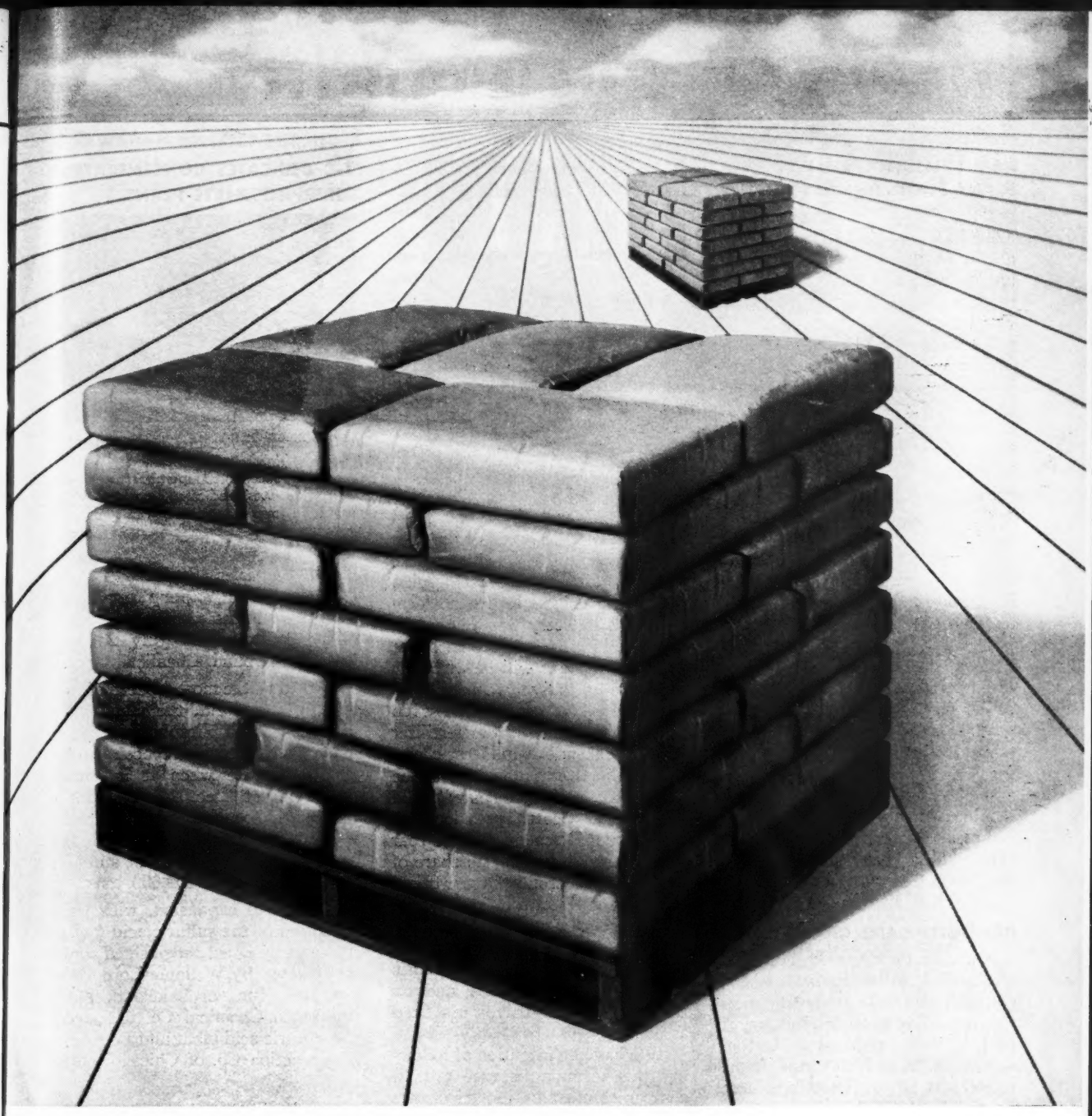
FERTILIZERS

U. S. 2,933,372, issued April 19, 1960 to Paul D. V. Manning and assigned to International Minerals & Chemical Corp., describes a method for eliminating fluorine from an aqueous solution of fluorine-containing phosphatic materials obtained from the acidulation of phosphate rock.

The solution is introduced under sufficient superatmospheric temperature and pressure to suppress vaporization of the solution, into a low pressure zone in which the solution partially flash vaporizes. A portion of the water and fluorine-containing material is thus vaporized.

The unvaporized portion of the solution is recovered as a product solution of phosphatic material of reduced fluorine content.

U. S. 2,934,412, issued April 26, 1960 to Leonard A. Stengel and assigned to Commercial Solvents Corp., describes a process for preparing ammonium nitrate prills from molten ammonium nitrate.



Stack better...pack better...close tighter!

ST. REGIS® PASTED VALVE BAGS give you an all-around saving of time and money because they . . .

STACK BETTER—Take up less room on the warehouse floor, because squared ends allow them to be stacked and stored snugly together. PACK BETTER—Easier to hang on the filling tubes of packers. Operators use less waste motion . . . and there's less waste due to spillage. CLOSE TIGHTER—Since the ends are securely pasted together, they form a tighter valve closure than sewn valve bags. Less siftage, more protection. LOOK BRIGHTER—With six flat surfaces, there's plenty of room to imprint your name and product information *big, bold* and *bright.*

St. Regis Stepped End Type Pasted Valve Bags are now available with new, improved Capcote* PE lining—to give you more moisture protection at *less* cost.

The money-saving Pasted Valve Bag is an example of St. Regis *Packaging-in-Depth* in action—a complete bag service available from 13 manufacturing plants and 33 sales offices across the country. For complete details, call the Bag Division representative in your area!

*Trademark

Packaging-in-Depth by BAG DIVISION **St.Regis** PAPER COMPANY

NEWS OF THE INDUSTRY

F
C

$22 MILLION FERTILIZER PLANT PLANNED FOR IOWA

Plans for the construction of a $22 million chemical fertilizer plant at Ft. Madison, Iowa, have been announced by H. J. Grady, president of California Spray-Chemical Corp.

Grady said that the new fertilizer facility will be one of the nation's largest, employing about 200 persons at the start of operations.

The plant will produce nitrogen in various forms. Among them will be complex pelleted fertilizers, prilled ammonium nitrate and anhydrous ammonia. An ammonia plant, a nitric acid plant and facilities for processing phosphate rock—all used in the complex fertilizer manufacturing process—are also included in the total operation.

Located on the Mississippi River, the new Calspray operation will have ready access to rail, water and truck transportation.

Production plans presently call for 300 tons per day of anhydrous ammonia, 150 tons of prilled ammonium nitrate and 600 tons of complex fertilizers daily. The principal marketing area will be in the North Central group of states.

PANOGEN NAME CHANGE

Name of Panogen Co. has been changed. It will be known as Agricultural Div., Morton Chemical Co., according to an announcement by J. E. Rich, president of Morton.

Rich explained that the name was changed to describe more accurately the division's growth in the agricultural chemical field.

GRACE CHANGES NAMES OF TWO DIVISIONS

W. R. Grace & Co. has changed the name of two of its eight chemical divisions. Grace Chemical Division's new name becomes Nitrogen Products Div., while Dewey and Almy Overseas Div. becomes Overseas Chemical Div.

Both name changes reflect the increased scope of operations of the two divisions. In each case personnel remains the same.

Nitrogen Products Div. operates an ammonia and urea plant in Memphis, Tenn. It also has been assigned management responsibility for Federation Chemicals Ltd. in Trinidad, B.W.I. and Caribe Nitrogen Corp. in Puerto Rico. Both of these firms are producers of ammonia, ammonium sulfate and sulfuric acid, while Federation Chemicals also produces urea. In addition, Nitrogen Products Div. also operates a number of ammonia distribution facilities in the midwestern part of the United States.

FARM CHEMICALS MFRS. NOW OFFERED 5-YEAR LOANS

Farm chemicals companies which can use $75,000 to $2,000,000—and prove that they can utilize it to expand profitably—now can get it.

A new, long-term financing plan for growth companies in the farm chemicals industry was announced last month by Mercantile Discount Corp. The loans will be available for terms up to five years.

"Extensive experience with growth companies in the fertilizer and farm chemicals industry shows us that short-term money is not the answer to their problems," said Robert B. Scott, president of Mercantile Discount. Five-year capital loans involving no share of ownership or profits have worked out to be the best solution.

"The covenants which insurance companies use in their long-term loans place unnecessary emphasis on working capital ratios, and on the value of the borrower's fixed assets.

"We have no intention of following this formula because growth companies must be judged on the basis of earnings potential rather than total assets, although the standard type of business loan collateral is involved in our long-term loans," Scott said.

The company's headquarters are at 110 South Dearborn St., Chicago 3, Illinois.

NEW FERTILIZER PLANT

A new fertilizer plant will be built on a 250-acre site between Hanceville and Garden City, reports C. W. Paris, assistant general manager of the Cotton Producers Association. Scheduled for completion by December 17, the plant will concentrate on the manufacture of granular fertilizer.

V-C DEDICATES CONCENTRATED SUPERPHOSPHATE PLANT

V-C's executive vice president Charles T. Harding (right), in whose honor V-C's expanded concentrated superphosphate plant in Florida was dedicated, confers with Florida's governor-nominee, Farris Bryant (center), and V-C president Justin Potter.

The "Charles Tayloe Harding Concentrated Superphosphate Plant" at Nichols, Fla., was formally dedicated on July 20 by Virginia-Carolina Chemical Corp.

Said to be the most modern of its type in the world, the plant will produce enough phosphoric acid to make 300,000 tons of concentrated superphosphate when it is completed about Dec. 1. A diammonium phosphate unit is also under construction. When this is completed, it will have an annual capacity of about 100,000 tons.

The entire expansion, with the exception of the sulfuric acid facility, was designed, engineered and constructed by Wellman-Lord Engineering, Inc., of Lakeland, Fla. Monsanto Chemical Co. designed the sulfuric acid plant and Leonard Construction Co. of Chicago built it.

Charles T. Harding, V-C's executive vice president for whom the new plant is named, started with the company 43 years ago as a handyman in a Washington, N. C., fertilizer plant.

Farris Bryant, Democratic nominee for governor in Florida, was principal speaker at the ceremony. He praised Harding's career with V-C and pledged that industrial development of Florida will be the main goal of his new administration.

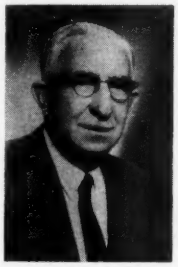
Harding said he felt both "humble and happy. If we were to give credit where credit is due," he said, "this great plant would bear hundreds of names . . . "

HAWAIIAN DISTRICT FORMED

Establishment of a new sales district comprising the State of Hawaii has been announced by California Spray-Chemical Corp. Manager is Robert Uttermohlen, formerly a district agronomist for Calspray in Arizona and New Mexico.

FMC RESEARCH SCIENTIST COMPLETES AFRICAN TOUR

A two-month tour of Africa's pyrethrum growing regions was recently completed by Dr. Herman Wachs, research scientist for Fairfield Chemicals, Food Machinery and Chemical Corp.



Wachs

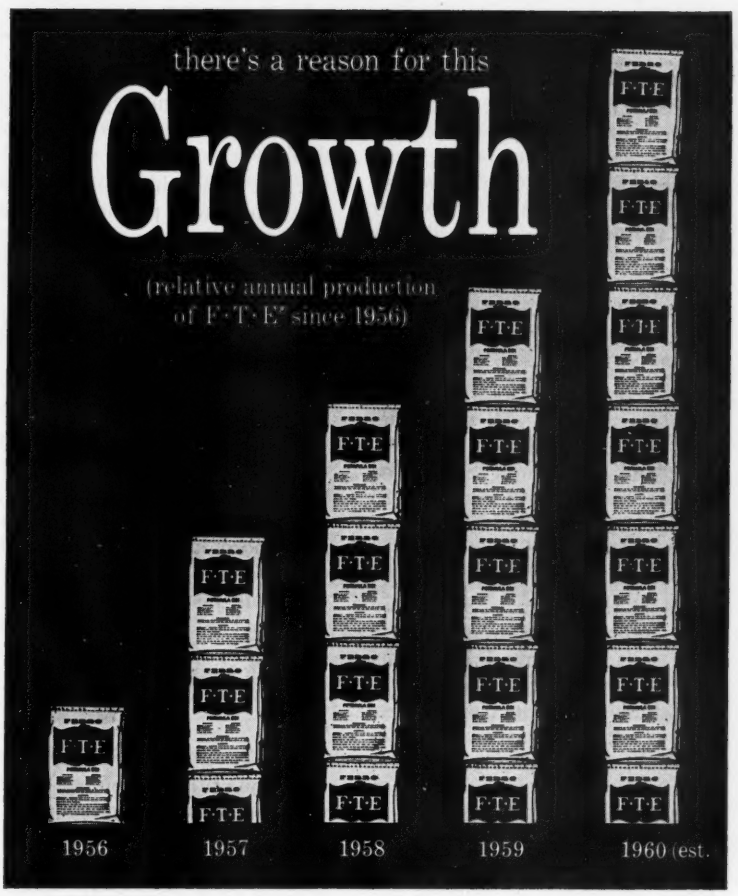
Dr. Wachs is the developer of the synergist, piperonyl butoxide. This chemical, when combined with the extract of pyrethrum flowers, produces Pyrenone, an insecticide base used in home, industrial and agricultural insecticides.

Pyrethrum flowers rank as one of Africa's major money crops. The three prime growing areas of Kenya, Tanganyika and the Congo supply about 98 per cent of the United States' pyrethrum requirements.

Accompanied by his wife, Dr. Wachs traveled extensively throughout the growing regions, followed by stops in Israel, Greece, Italy, Germany and England. African pyrethrum farms, he noted, range from typical pioneering enterprises hewn from rugged, uncultivated terrain to large pyrethrum plantations.

The typical pyrethrum farmer, he revealed, resembles the pioneer of America's Early West. "African farmers mainly are vigorous, friendly, hardworking and extremely hospitable people," he said.

Commenting on the growth of African nationalism and its possible effect on pyrethrum supplies, Dr. Wachs said, "Leaders in the newly independent countries of the Congo and Tanganyika, as well as those in Kenya—where independence is expected—are vitally interested in fostering agriculture."



Six trace elements, in fritted form, make FTE more productive, more predictable

It took years of development and testing to perfect FTE—to get just the right amounts and proportions of the six elements, and the proper degree of *controlled solubility*, for best results.

While *two* standard formulas are available, each developed to "work best" in specific areas of the country, both can be *safely used anywhere*, and *on any crops* . . . with assurance that the nutrients needed will be supplied all season.

While FTE may cost more per pound than more soluble products, its greater effectiveness permits you to use less of it in your mix for any desired results. That's why more and more companies are using it, and in more and more of their production.

Is FTE in *your* plans for next season? *It should be* . . . if only on a "let's try it" basis.

FERRO

FERRO CORPORATION

Agricultural Division

4150 East 56 Street • Cleveland 5, Ohio

WITCO ACQUIRES SONNEBORN

Witco Chemical Co., Inc., has acquired 100 per cent interest in privately owned Sonneborn Chemical and Refining Corp. and its subsidiaries in exchange for 300,000 shares of Witco stock, according to a joint announcement by Robert I. Wishnick, Witco board chairman, and Rudolf G. Sonneborn, president of Sonneborn.

Also reported was election to Witco's board of directors of three Sonneborn officials—R. G. Sonneborn; Gustave Schindler, vice president; and Dr. Henry Sonneborn III, vice president and secretary. In addition, Schindler and Dr. Sonneborn have joined Witco's executive committee.

Among the products Sonneborn manufactures and markets are white oils, solvents, lubricating oils, petroleum sulfonates, petrolatums, building-product specialties, micro-crystalline waxes and other petroleum specialties.

PHILLIPS BUILDS 15,000 TON NH_3 STORAGE TANKS

Phillips Chemical Co., wholly-owned subsidiary of Phillips Petroleum Co., is constructing four 15,000-ton-capacity ammonia storage tanks, refrigerated to hold storage temperature at about −30 degrees F. at atmospheric pressure on the tanks. Two will be located at Cactus ammonia plant, operated by Phillips near Etter, Tex., and two at the company's East St. Louis, Ill. terminal on the Mississippi river.

These atmospheric pressure storage tanks will provide for more economical storage of anhydrous ammonia than conventional tanks, the firm said. Construction is expected to be completed in time to fill the new tanks before the sales season next spring.

PRICE CHANGES

Collier Carbon and Chemical Corp., in an effort to establish a more "realistic" price for anhydrous ammonia in California, announced last month that effective October 1, 1960, its posted price will be $92 per ton, f. o. b. plant. The firm also established, at buyer's option, zoned delivered prices of $98 in California and $100 in Arizona, Nevada and southern Oregon.

According to Collier, the current California price of $66 per ton does not provide an adequate margin for the ammonia producer to obtain a fair return on investment, let alone provide for increasing demands made on the producer to develop new and improved products, to maintain adequate seasonal inventories, and to furnish financial aid and technical service to the farmer.

The firm emphasized that, while its new price is based on a reasonable return on investment, the company will continue to meet any competitive prices in its marketing area.

IMC PURCHASES PLANT

International Minerals & Chemical Corp. has purchased Welcome Agricultural Chemical Co.'s fertilizer plants at Welcome and Marshall, Minn.

IMC will continue these operations and will add two premium plant foods, Rainbow and Super Rainbow, to the product line.

R. A. Francher, general manager of the Welcome plant, and Kenneth Verschnetse, general manager of the Marshall plant, will continue with IMC to supervise plant production and to handle local sales.

IMC has 70 plants in the United States, Canada and Mexico, including 27 fertilizer plants.

JONAS CAROL WINS AOAC WILEY AWARD

Jonas Carol, Deputy Director of the Division of Pharmaceutical Chemistry, Food and Drug Administration, has been selected to receive the 1960 Harvey W. Wiley Award of the Association of Official Agricultural Chemists. The award was established in 1956 to honor the father of the original Pure Food and Drug law and a founder of the AOAC.

Companies Report on the First Six Months

	SALES		NET INCOME		EARNINGS/SHARE	
	1960	1959	1960	1959	1960	1959
American Cyanamid Co.	$305,154,000	$297,498,000	$28,437,000	$27,176,000	$1.34	$1.28
American Potash & Chem. Corp.	26,423,822	27,715,232	2,621,306	2,539,748	1.11	1.07
Commercial Solvents Corp.	34,385,512	32,474,357	2,618,178	1,367,312	.93	.49[1]
Diamond Alkali Co.	71,542,455	66,295,707	6,374,303	5,201,563	2.19	1.80
Hercules Powder Co.	160,496,882	137,200,312	13,187,172	11,661,697	1.51	1.36
Hooker Chemical Corp.[2]	74,994,900	74,732,200	6,387,800	6,897,700	.86	.93
International Min. & Chem. Corp.	123,870,000	112,560,000	7,481,000	6,189,000	3.00	2.47
Merck & Co.	111,416,000	110,787,000	14,784,000	15,847,000	1.37	1.48
Michigan Chem. Co.	3,869,000	4,595,000	(128,000)[3]	346,000	(.17)[3]	.45
Monsanto Chemical Co.[4]	431,787,000	413,708,000	33,486,000	35,209,000	1.45	1.52
National Distillers and Chem. Corp.	280,710,000	270,302,000	11,724,000	11,772,000	1.04	1.05
Olin Mathieson Chemical Corp.	348,281,000[5]	347,296,000[5]	18,666,000	17,504,000	1.40	1.32
Pittsburgh Plate Glass Co.	323,971,000	279,880,181	25,723,044	20,015,936	2.54	1.98
Southern Nitrogen Co.	7,103,000	5,815,000	1,446,000	1,107,000	1.16	.89
Spencer Chemical Co.	74,094,050	73,031,289	6,702,148	6,653,160	2.27	2.25[6]
Stauffer Chemical Co.	114,349,000	117,221,000	10,820,000	11,649,000	1.18	1.27
Texaco Inc.	[7]	[7]	177,342,169	164,961,377	2.93	2.78
Texas Gulf Sulphur Co.	29,117,460	33,024,848	6,128,128	6,969,975	.612	.696
U. S. Borax & Chem. Corp.[8]	51,203,881	47,319,803	5,394,190	4,676,029	1.17	1.00
Witco Chemical Co., Inc.	30,766,300	26,691,800	1,129,500	1,021,500	1.03	.90

[1] Adjusted to basis of present number of outstanding shares.
[2] Six-month period ends May 31.
[3] Loss.
[4] Parent firm, subsidiaries and ½ of sales of 50% owned companies.
[5] and operating revenues.
[6] Adjusted to present capitalization to include shares issued in connection with acquisition of coal company and 2-for-1 stock split up.
[7] Not reported.
[8] 9-month period ending June 30.

IMC EXECUTIVES TOUR WESTERN EUROPE

Fourteen executives of International Minerals & Chemical Corp., and their wives, last month made a 15-day, 5-country tour of Western Europe as part of President Eisenhower's People-to-People Program for building friendships abroad.

The tour, from August 1 to August 15, sent the "good-will ambassadors" to England, France, The Netherlands, West Germany and Italy.

Heading the party from IMC's Skokie headquarters were Anthony E. Cascino, marketing vice president, and E. C. Horne, sales manager of the materials department in the Agricultural Chemicals Div.

Other members of the party were William W. Chadwick, Gerd W. Kraemer, Jack W. Lindsey, William E. Lane, Robert A. Hauerman, Alexander McBride, Harold Hoffman, Basil Surgent, Melvin Kartchner, William Lawhon, James Patrick, and Harry M. Feigin.

AD AWARDS TO GRACE

The Nitrogen Products Div. of W. R. Grace and Co. was awarded three Citations of Excellence for its advertising at the 32nd annual conference of the First Advertising Agency Group in Dallas, Tex.

The Grace newsletters received the First Award in the field of Industrial Direct Mail. A series of ads featuring Grace Feed Urea received a Citation of Excellence in the field of advertising for farm, livestock and horticultural publications, and a sales promotional manual produced by the Nitrogen Products Div. received a Citation of Excellence in its category.

The entries were prepared by Ridgway-Hirsch Advertising Co., under the supervision of Burton L. How, advertising manager of the Nitrogen Products Div.

MEYER TO OFFER COMPLEX SOLID FERTILIZERS

From a new plant to be erected at Dominguez, Calif., Wilson & Geo. Meyer & Co. soon will offer Western agriculture a full line of complex solid fertilizers, reports Jeffery W. Meyer, president.

The Meyer firm will act as exclusive agent of Stauffer Chemical Co., builder of the new plant in cooperation with Shell Chemical Co. and Western States Chemical Co. The plant, with more than 50,000 tons annual capacity, is scheduled to be in operation next year.

NEW SULFURIC ACID PLANT

A new sulfuric acid manufacturing plant has been put into operation at Riverton, Wyo., by Susquehanna-Western, Inc., Denver subsidiary of the Susquehanna Corp. of Chicago. The facility expands the firm's sulfuric acid production capacity to 75,000 tons per year.

Susquehanna-Western launched its sulfuric acid operations in December, 1958, with completion of Wyoming's first commercial sulfuric acid plant, also located in Riverton. The company's total investment in acid producing plants now exceeds $1,350,000.

The newer plant was constructed in four months by the parent company's engineering division. Fully automated, the plant produces the acid by burning pure sulfur and converting the resulting gases. The sulfur is obtained from local Wyoming suppliers who recover it from sour natural gas.

NOW YOU CAN OBTAIN
FC REPRINTS

Check reprints desired:

How Mkt. Research Can Work for You
- ☐ Part I—Comparing activities of 2 brands in one area
- ☐ Part II—Examining one product in 2 different areas
- ☐ Part III—Your Herbicide Customer

Salesense Series
- ☐ Sell to Dominant Buying Motive
- ☐ Knowledge makes the Difference
- ☐ Plug up the Leaks in your Sales Plan
- ☐ Organize Your Time
- ☐ The Magic of Enthusiasm

Successful Selling Series:
- ☐ Secrets of Persuasion
- ☐ 14 Ways to Definite Decisions
- ☐ Convince Your Prospect
- ☐ 18 Telephone Shortcuts
- ☐ What's In It For Me?
- ☐ Hidden Plusses
- ☐ Post Office Can Help Sell
- ☐ Pick Up New Business from Old Accounts
- ☐ Ask for the Order and Get It
- ☐ Beat the Competition . . . With Service
- ☐ Complaints into Sales
- ☐ Demonstrate with Showmanship

Credit Series:
- ☐ The Credit Mess
- ☐ Cash Flow Chart can ease the Credit Strain
- ☐ Disorganization—a Problem
- ☐ Reaching the Middle Market
- ☐ Credit Training for Dealers

Miscellaneous Marketing:
- ☐ Adapt Mkt. Research to Sales Planning
- ☐ Dealer Meetings that Pay
- ☐ Publicity that Sells
- ☐ Motivate Salesmen
- ☐ Merchandising Fertilizer
- ☐ Muscle In Your Marketing
- ☐ Farm Chemicals—Coming Into Their Own
- ☐ Clean Up Your Communications
- ☐ Fertilizer Consumption Since '45
- ☐ How to Figure Sales Potential
- ☐ Is Your Promotion Effective?
- ☐ Be a Constructive Critic of Your Present Marketing Program
- ☐ Build Sales Through Successful Farmer Meetings
- ☐ What Is A Fair Price?
- ☐ Creative Pricing
- ☐ Steps to Good Sales Meetings
- ☐ Obstacles to Marketing

Reprints 50 cents per copy; bulk price on request.

Enclosed is my check for $...

Name.....

Title.....

Address.....

City.....Zone...State.....

Send to: Farm Chemicals • 317 N. Broad St., Philadelphia 7, Pa.

DOUGLASS HONORED BY VPI

Ralph Benjamin Douglass, chairman of the board of Smith-Douglass Co., Inc. is a recipient of the 1960 Certificate of Merit presented by the Virginia Polytechnic Institute for outstanding contributions to Virginia agriculture.

Also presented the award was Harold W. Craun, outstanding dairy farmer of Roanoke County.

Douglass went to Virginia in 1920 as vice president of Eastern Cotton Oil Co. at Norfolk. In 1927 he and Mr. Smith organized the present Smith-Douglass Co. He served as vice president from 1927 to 1950 and as president from 1950 to 1957, when he was made chairman of the board. He was one of the organizers and a member of the board of directors of the National Plant Food Institute.

Smith-Douglass has given substantial financial support to the agricultural programs of VPI and other groups in Virginia and other states. The firm has supported undergraduate scholarships, graduate training, research in clay mineralogy, soil fertility, turf and other fields, and has followed closely the experimental work of the colleges and the Department of Agriculture in using research results to better serve the farmer.

"TECHNIQUES OF PLANT MAINTENANCE AND ENGINEERING—1960"

Publication of the eleventh volume in the annual series, "Techniques of Plant Maintenance & Engineering—1960" has been announced by Clapp & Poliak, Inc.

The volume is a report of the Plant Maintenance & Engineering Conference held earlier in the year in Philadelphia. Measuring 8½ x 11 inches, it contains 341 pages, and is bound in cloth-on-board. Priced at $10 postpaid, the work is available from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

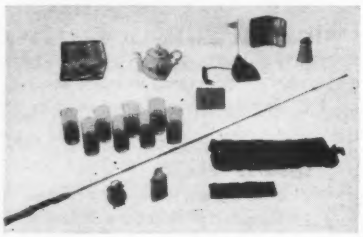
Reflecting the growing importance of maintenance and engineering functions in industry, the volume reports on the advance of automation from research and experiment to reality, and on the significance of automation in maintenance operations.

Thirty-four papers presented at the 1960 conference are reprinted, along with text of all discussions, comments and questions asked from the floor and answers from speakers and panel members.

Among the topics covered: "How We Control Maintenance," "Controlling Maintenance Stores," "Supervisory Training," "Maintaining Control Instruments," "How to Use the Industrial Engineering Techniques in Maintenance," "Industry Looks at Air Pollution Control," "Water Pollution—Its Effect on Natural Waters and Its Control."

Also, "Maintenance Problems of Small Plants," "The Place of the Maintenance Function in Purchasing: The Plant Engineer's Viewpoint and The Purchasing Man's Viewpoint," and "Research and Development Techniques in Maintenance."

CHLORDANE DISPLAY CONTEST



Among gifts offered to garden dealers who displayed Chlordane were an electric golf practice putter, a fiberglass spin and casting rod, and a 24-piece tool kit. Sponsored by Velsicol Chemical Corp., the contest includes $1,250 in cash prizes. Gifts are to be given to every dealer who displayed five or more cases of Chlordane, regardless of brand, with Chlordane literature and banner, for two consecutive weeks prior to September 30.

TEXACO REORGANIZES RESEARCH & TECH. DEPT.

The Research and Technical Dept. of Texaco Inc. has been reorganized to keep pace with the company's current and future expansion, according to L. C. Kemp Jr., vice president in charge of the department. Texaco's expenditures on research and technical activities have increased substantially during the past 10 years, and this year will total nearly $23 million. The reorganization will provide the department with the flexibility continued growth will require, Kemp said.

Five areas of responsibility have been established. Managers announced to head these will be: Planning and Information: Dr. W. J. Coppoc; Commercial Development—Products: Patrick J. Keating, Jr.; Commercial Development—Processes: John K. McKinley; Technical Services: W. A. McMillan; and Administrative Services: Dr. Richard L. Sawyer. All will be located at the Department's headquarters at the Texaco Research Center, Beacon, N. Y.

CANADIAN PESTICIDE PLANT

Naugatuck Chemicals, division of Dominion Rubber Co., let a contract in July for what could be Western Canada's first basic pesticides plant, according to the Toronto *Financial Post*. It is to be located on a 52-acre site adjacent to the Canadian Chemical Co. property in Edmonton, and is the principal part of a $1.6 million agricultural chemicals expansion program being undertaken by Naugatuck.

A Winnipeg firm, Interprovincial Cooperatives, Ltd., has also announced plans for a basic pesticides plant, and Dow Chemical of Canada is reported to intend building a new plant unit at Fort Saskatchewan to produce pentachlorophenol.

PHOSPHATE DEPOSIT BOUGHT

An estimated 120-million-ton phosphate deposit on the north side of the Uinta Mountains, about 12 miles from Flaming Gorge Dam in Utah, has been purchased from Utah interests by Yuba Consolidated Industries, Inc., San Francisco, for an undisclosed sum.

Selling state and federal leases were J. H. Morgan, Sr., J. H. Morgan Jr. and Clarence I. Justheim. The sellers retain a two-cents-a-ton royalty on beneficiated products, said J. H. Morgan, Jr.

The deposit lies in a northwesterly direction from the large deposit near Vernal which is to be developed by San Francisco Chemical Co.

"We are in an enviable position with our deposits because of the nearness of transportation," the junior Morgan said. He pointed out that the phosphate is only 43 miles by highway from the railhead of Green River, Wyo., and when Flaming Gorge Dam is completed,

the ore could be barged up the river to Green River.

The deposit is reported to be 327.7 feet thick and comprises three members. The lower is 108.6 feet thick, and is composed of sandstone, limestone and dolomite; the middle member is 43.7 feet thick and is phosphatic beds of shale, limestone and dolomite, and the upper member is 175.4 feet thick, composed of cherty limestone, dolomite and sandstone.

NEW EXECUTIVE ASSIGNMENTS AT SPENCER

John C. Denton, Spencer Chemical Co. president, has announced a "redeployment of key personnel" involving top executives of the company.

The moves, according to Denton, are designed to concentrate efforts for diversification through acquisition and expansion; put greater emphasis on foreign development and provide maximum emphasis on development and sale of the company's plastic products.

Frank Pyle, formerly vice president—plastics, becomes vice-president and assistant to the president. He will be responsible for Spencer's foreign activities, commercial development for diversification and the nuclear fuels program.

Harold Dinges, former vice president—industrial chemicals, becomes vice president—plastics, responsible for plastics sales and sales-related activities. E. V. Friedrich, vice president—administration, will be responsible for overall direction of Plastics Div. activities.

The Industrial Chemicals Div. will remain as a separate entity but will be under the direction of Byron Kern. Kern, who has been vice president—agricultural chemicals, now will have the title of vice president—agricultural and industrial chemicals.

NITROGEN SOLUTION NEWS TO BE SENT TO DEALERS

Distribution of a monthly Arcadian Nitrogen Solution News sheet by Allied Chemical Corp. to solutions dealers and members of the liquid fertilizer industry has been announced by John Waugh, director of advertising, Nitrogen Div.

Waugh said many tradesmen have indicated the need for technical and marketing information on solutions to help improve their fertilizer operation and increase sales. "A news sheet covering the latest information about liquid nitrogen will aid the industry," Waugh said.

RECORD SULFUR CARGOES LEAVE BEAUMONT, TEX.

Texas Gulf Sulphur Co. reports completion of the loading of two record cargoes of sulfur from its recently completed Beaumont sulfur terminal.

With the sailing of the "Athelprince", carrying a cargo of 11,419 tons, and the sister ship "Athelprincess" carrying 11,307 tons, in July, the company recorded its largest sulfur shipments to foreign ports from Beaumont. Both were British motor ships carrying dry bulk sulfur destined for Australia.

The new terminal, located on the Neches River, is equipped to handle both dry and molten sulfur and is now shipping sulfur from all four of the company's Texas mines.

INSECTICIDE AIRLIFT

Dylox technical material from Farbenfabriken Bayer, A. G. of Germany, is unloaded from a charter KLM cargo plane at International Airport, New York City, en route to Chemagro Corp. for formulation. Chemagro has been operating the airlift to supply heavy demand for Dylox in the California area, where growers use the insecticide to control insects on cotton, alfalfa and sugar beets.

PORTER TO SUCCEED CRISSEY AT GLF

John R. Porter, director of the Plant Food and Seed Div., Farm Bureau Service Company of Iowa, will become manager of G.L.F. Soil Building Div. when John C. Crissey retires Dec. 31.

Crissey, Soil Building Div. manager since 1941, joined G.L.F. in 1925.

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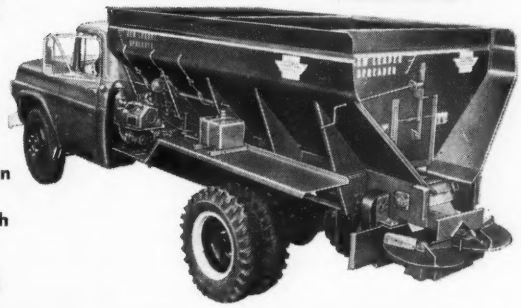

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DuPONT TO EXPAND KY. SULFURIC ACID PLANT

Plans for a major expansion and modernization of its sulfuric acid plant at Wurtland, Ky., have been announced by DuPont Co. The firm also said it will establish a new bulk acid terminal near New Cumberland, W. Va., to provide service for customers in the eastern Ohio and Pittsburgh areas.

Upon completion late next year, the Wurtland plant will become one of DuPont's largest acid plants, according to Clark W. Davis, general manager of the company's Industrial and Biochemicals Dept.

The bulk acid terminal will be located on a 70-acre site along the Ohio River about six miles downstream from East Liverpool, O. Docking and liquid terminal facilities will be installed to handle acid shipped by barge from the Wurtland plant.

HOOKER BUYS BUTLER CHEM.

Hooker Chemical Corp. has acquired Butler Chemical Co., of Galena Park, Tex., near Houston. Butler manufactures defluorinated phosphate rock, an animal and poultry feed supplement. Purchase was announced jointly by Thomas E. Moffitt, Hooker president, and George A. Butler, president of Houston Corp., of which Butler Chemical is a division.

Moffitt said the company looks forward to the opportunities available for further developing the growing phosphate rock feed supplement business at Houston. "Furthermore," he said, "we already manufacture elemental phosphorus and many phosphorus-derived products and other chemicals, some of which may lend themselves to also being made at Houston one of these days."

The Butler plant is located upon a 20-acre site on the Houston ship channel. As its main raw material the company uses Florida phosphate rock which has been dried and ground. The rock is then shipped to Butler's plant where, essentially, it is treated with phosphoric acid under heat, making it suitable for mixing into balanced livestock and poultry feed formulations. Marketed under the trade name "Pollyphos," the product is sold to midwest and west coast feed manufacturers.

Associations Meetings

CARPENTER WINS AGR. COMMUNICATIONS AWARD

Wilson congratulates Carpenter

William L. Carpenter, head of the Division of Agricultural Information, School of Agriculture, North Carolina State College, was presented the "Agricultural Communications Award" sponsored by the American Association of Agricultural College Editors and the National Plant Food Institute, at a special luncheon ceremony at Oregon State College, during the AAACE meeting.

Louis H. Wilson, secretary and director of information for NPFI, presented to Carpenter a scroll signed by the national judges, together with a check for $500 to be used for advanced professional training in agricultural communications.

ASFFCO ADDS A "P"

Next year Kentucky plans to host the Association of Southern Feed, Fertilizer and *Pesticide* Control Officials annual meeting. At its 18th annual meeting June 20–22 at the Riverside Hotel, Gatlinburg, the Association of Southern Feed and Fertilizer Control Officials voted to add "Pesticide" to its name and scope.

New officers are Bruce Poundstone, president; F. S. Carr, vice president, and Maurice Rowe, secretary-treasurer.

NO. CENTRAL WEED CONF. TO BE HELD IN MILWAUKEE

The 1960 annual North Central Weed Control Conference will be held at the Hotel Schroeder in Milwaukee, Wisc., December 12–14. Reports will be presented covering recent weed control research in the north central United States, Alberta, Saskatchewan and Manitoba.

Participants at the Montana Plant Food Association meeting in Boulder, Mont., June 23–24, standing, left to right are: Dick Kube and Phil Donnley, Balfour Guthrie; Warren Stensland, Cominco Products; Bob Wahke and J. Killian, Farmers Union Central Exchange; Correy Dogstrom, Teslow, Inc.; Leonard De Jongh, Farmers Union Central Exchange; F. Todd Tremblay, Pacific Northwest Regional Director of the National Plant Food Institute; Seated: Bill Aldworth, Farmers Union Central Exchange; George Mason, Montana Flour Mills; Lyle Ekstrom and Homer Turner, J. R. Simplot Co.; Lyle Mills, Wilson & Geo. Meyer; Ross Hansen, Phillips Petroleum Co.; John Latta, Spencer Chemical Co.; Lars Gallup, Whirry Soils Service; and Harold Ude, Farmers Union Central Exchange.

CMRA MEETING THEME: THE EUROPEAN CHEMICAL INDUSTRY

The Chemical Market Research Association fall meeting, September 22–23, at Portsmouth, N.H., will have as its theme, "The European Chemical Industry." Keynote speaker, Ralph M. Binney, senior vice president, First National Bank of Boston, will discuss the broad economic picture in Europe. The chemical market outlook in individual European countries will be outlined.

J. W. Everson, association president, said that attendance at this meeting is not limited to members but is open to all those interested. Registration forms are available from CMRA, 100 Church St., New York City 7.

FUNGICIDE COLLOQUIUM HELD AT APS MEETING

The Fungicide Colloquium was held on August 30 as part of the program of the annual meeting of the American Phytopathological Society, American Baptist Assembly, Green Lake, Wis., August 28–31.

Dr. Saul Rich, chairman of the colloquium, who is with the Department of Plant Pathology, Connecticut Agricultural Experiment Station, said the program included:

"Prospects for an Antiviral Agent," by Dr. W. E. Rader, Shell Development Co.; "Cooperative Planning for Research on Pesticides," by Dr. Noble Clark, Assoc. Director, Wisconsin Agricultural Experiment Station; "The Tenuous Trail from Tube to Trial," by Dr. R. A. Ludwig, director, Research Station, Canada Dept. of Agriculture; and presentation of new fungicide compounds by industry representatives.

MISS. COUNCIL HOLDS FIRST ANNUAL CONVENTION

Program for the first annual convention of the Mississippi Soil Fertility and Plant Food Council was intended to be "challenging, informative and enjoyable," said H. S. "Bill" Gordon, Jr. The convention was held August 25–27 at the Buena Vista Hotel in Biloxi.

The afternoon program on August 25, presided over by Vice President Mike R. Blouin, featured

(*Continued on next page*)

Calendar

Sept. 9. Fall Agronomy Field Day, Univ. of Calif., Davis, Calif.
Sept. 11-16. American Chemical Society National Meeting, New York.
Sept. 12-14. Canadian Agricultural Chemicals Assn. Annual Meeting, Britannia Hotel, Lake of Bays, Muskoka, Ontario, Canada.
Sept. 22-23. Chemical Market Research Association Fall Meeting, Portsmouth, N. H.
Sept. 24-26. Western Agricultural Chemicals Association 31st Annual Meeting, Palm Springs Riviera Hotel, Palm Springs, Calif.
Sept. 25-28. American Institute of Chemical Engineers Meeting, May Hotel, Tulsa, Okla.
Sept. 27-29. National Agricultural Chemicals Association Annual Meeting, Hotel del Coronado, Coronado, Calif.
Sept. 29-30. Northeast Fertilizer Conference, Hotel Hershey, Hershey, Pa.
Oct. 5-6. Southeast Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.
Oct. 10-11. Four-State Aerial Applicators Conference, sponsored by Norkem Corp., Hotel Chinook, Yakima, Wash.
Oct. 14. Assn. of American Fertilizer Control Officials Annual Meeting, The Shoreham, Washington, D. C.
Oct. 17-18. National Safety Council, Fertilizer Section, National Safety Congress, Chicago, Ill.
Oct. 25. Assn. of Consulting Chemists & Chemical Engineers Annual Meeting, Shelburne Hotel, New York City.
Nov. 2-4. Fertilizer Industry Round Table, The Mayflower, Washington, D. C.
Nov. 3-4. Annual Convention, Pacific Northwest Plant Food Assn., Boise, Idaho.
Nov. 9-11. National Fertilizer Solutions Association, Peabody Hotel, Memphis, Tenn.
Nov. 13-15. 37th Annual California Fertilizer Association Convention, del Coronado Hotel, Coronado, Calif.
Nov. 14. Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Roosevelt Hotel, New York City.
Nov. 15-16. Second Annual Farm Chemicals Marketing Seminar, Delmonico Hotel, New York City.
Nov. 28-Dec. 1. Entomological Society of America Annual Meeting, Haddon-Hall, Atlantic City, N. J.
Dec. 5-9. American Society of Agronomy Meeting, Morrison Hotel, Chicago, Ill.

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timely addresses by staff representatives from Mississippi State University. Entertainment on Thursday night was highlighted by a Shrimp Jamboree.

On August 26, W. P. McMullan, Jr., vice president, Deposit Guaranty Bank and Trust Co., discussed "Farm Financing and Credit." John Zigler, vice president of International Minerals & Chemical Corp. spoke on "Industry's Outlook on Credit and Its Relation to Sales. Owen Cooper, executive vice president, Mississippi Chemical Corp., took "A Look To Mississippi's Future." W. F. Price, general sales manager, Swift & Co., talked on "So Much for So Little."

There were golf and horseshoe tournaments, a social hour, banquet and dance.

People

The American Agricultural Chemical Co. A. B. Crawley, former assistant manager, becomes manager of Agrico sales at Knoxville, Tenn. New assistant manager is B. J. Farmer, Jr., formerly a field salesman. G. H. Walker, former assistant manager at Cleve-

Crawley

Walker

land, Ohio, becomes manager of sales at Danville, Ill. C. E. Murray, who had been a field salesman in New Jersey, has been named assistant manager at North Weymouth, Mass.

American Cyanamid Co. New addition to the staff of plant industry development is Dr. Harry E. Scott, who joins the Agricultural Division as an entomologist. He goes to Cyanamid from North Carolina State College where he was extension entomologist for the past seven years.

Scott

Armour Agricultural Chemical Co. William H. Cover has been appointed midwestern area sales manager, reports H. Vise Miller, company vice pres. and general manager of its fertilizer division. Cover is succeeded as division manager in Jeffersonville, Ind., by Paul N. Parks. Parks had been assistant manager of the firm's Cincinnati division. George C. Smith has been named Montgomery division manager, succeeding R. A. Ellington who has retired after 37 years of service.

Cover

Parks

California Spray-Chemical Corp. Wade M. Choate, district manager in San Jose, has announced transfer of Dr. Richard K. Krisch from the Sacramento Valley area to the coastal district, with San Jose as headquarters. He will be the district research agronomist in his new territory.

Canadian Industries Ltd. A. W. Birnie has been appointed technical manager of the Agricultural Chemicals Div., replacing K. A. Shantz, who is now the division's production manager. Dr. Birne joined C-I-L- in 1946 as a research chemist at the company's central research laboratory at McMasterville, Que.

Birnie

Dodge & Olcott, Inc. has appointed Kenneth W. Hartley as vice president and sales manager. A member of the D&O sales staff since 1949, in 1951 Hartley assumed management of the Chicago branch office.

Commercial Solvents Corp. Harry C. Hagerty has been elected to the board of directors. He is vice chairman of the board of the Metropolitan Life Insurance Co. and a member of the boards of First National City Bank of New York, RCA, NBC, Erie Railroad, East River Savings Bank and Rochester Gas and Electric Corp.

Hagerty

Food Machinery and Chemical Corp. Henry S. Winnicki has been named vice president of the Chemical Divisions of FMC. His new responsibilities will include three chemical staff groups, the Central Engineering, Process Development and Patent Depts.

Resignation of Dr. Emil Ott as vice president for Research and Development, Chemical Divisions, was announced. He will continue as part-time consultant for the company and will also devote himself to academic activities.

Ott

Appointment of Dr. Kenneth L. Hill as head of its Herbicide Laboratory and Eugene A. Lojewski as a chemist in its Organic Synthesis Laboratory has been made by the Niagara Chemical Div. of FMC.

General Chemical Div., Allied Chemical Corp. William E. Houghton is newly named sales manager for basic industrial chemicals produced by the division. He will be responsible for sales of aluminum sulfate, aluminum chloride

Houghton

and aluminum nitrate solutions, ammonium and potash "alum", a variety of sodium compounds and phosphoric acid.

John C. Fedoruk becomes technical director of Allied Chemical's General Chemical Div. He succeeds Dr. Howard H. Hurmence, who was recently named assistant director of research and development.

International Minerals & Chemical Corp. Dr. Allen T. Cole, minerals consultant, has been appointed property manager for the Florida and Tennessee phosphate operations of IMC. He will be in charge of acquisition of land reserves, utilization of properties prior to mining, and reclamation of mined-out areas.

Merck & Co., Inc. Edward D. Remas, a 20-year veteran of Merck and an agricultural field sales representative for Merck Chemical Div. since 1953, has been named advertising planner for the company's animal health products. He will report to H. George Wolfe, advertising manager.

Monsanto Chemical Co. John S. Sullivan of Indianapolis, Ind., has been named acting northeast area supervisor of agricultural chemical sales for Monsanto's Organic Chemicals Div. Sullivan, who had been sales representative with the St. Louis district sales office, has relocated in Stamford, Conn., and will fill in for Charles A. Leonard, northeast area supervisor, who is on leave of absence due to illness.

Sullivan

William A. Lang and John C. Moran have been appointed assistant directors of Monsanto's Marketing Services Dept. Lang will continue to direct the Industrial Design section, and Moran to direct the Marketing Administration of the department.

Potash Company of America. George A. Lux became chief industrial engineer on August 1. This is a new position within the company created to provide its line management staff with service in the field of management sciences covering industrial and methods engineering. In his new position, Lux will report directly to H. N. Clark, vice president in charge of production. Lux has been with American Viscose Corp. and International Minerals & Chemical Corp. Most recently he was staff manager of Industrial Engineering, Phosphate Operations of IMC at Bartow, Fla.

Nitrogen Div., Allied Chemical Corp. Appointment of Norman E. Hathaway as executive vice president of the division was announced recently by Jacob White, president of Nitrogen Div. Hathaway has been assistant to the division president since January 1, 1960. Before joining Allied Chemical, he was vice president of Oronite Chemical, a subsidiary of Standard Oil of California.

Hathaway

The Standard Oil Co. (Ohio). John A. Sherred has just been named manager of the market research and product development division of the Petrochemical Dept., according to an announcement by vice president Edward F. Morrill, who also is president of Sohio Chemical Co. Sherred will make his office headquarters in Cleveland. For eight years, Sherred was with Shell Oil Co., and for the past 12 years has been with Monsanto Chemical Co.

Stepan Chemical Co. Edward R. Mass has been appointed controller and office manager of the newly-formed Industrial Chemicals Div., and will be headquartered at Stepan's new $1 million administrative and research center at Northfield, Ill. Mass was formerly assistant to the treasurer.

Mass

Texas Gulf Sulphur Co. Ira E. McKeever is new general manager of sulfur operations. With headquarters at Newgulf, Tex., he will have direct charge of sulfur operations at all locations in the Gulf Coast region. In his new position he will act under direction of and will report to Hugh W. Strickland, vice president in charge of all company activities in the region.

Thompson Chemicals Corp. W. L. Barrett has joined the company's sales staff as cooperative specialist. For the past 12 years Barrett has managed the Agricultural Chemicals Div. for Consumers Cooperative Association of Kansas City. He taught agriculture before joining Consumers Cooperative.

Barrett

Virginia-Carolina Chemical Corp. has promoted three men in its Fertilizer Div. and another in its Bag Div.

W. M. Atkinson, former supervisor of the V-C fertilizer sales offices in North Carolina, has been named assistant general sales manager. Stan K. Thomsen, who had been a V-C salesman out of Estherville, Iowa, becomes assistant to the manager at the Forte Wayne, Ind., sales office; and J. D. Moseley, formerly a salesman out of Montgomery, Ala., is now assistant to manager in Shreveport, La.

In the Bag Div., Charles H. Kelley has been promoted to assistant manager. Kelley has been a salesman, sales analyst and sales manager for V-C since his graduation from the University of Richmond in 1952.

Kelley

Government

LATEST COUNT ON TVA PROCESS LICENSES

TVA reports that 37 licenses for the use of TVA-developed fertilizer processes or for the manufacture of equipment were issued during fiscal year 1960, which ended on June 30. This brought to 221 the total number of licenses that have been issued to 167 companies for use in about 230 plants.

Of this total 111 have been issued for use of the ammoniator-granulator or for its manufacture, 40 for use or manufacture of the continuous superphosphate mixer, 53 to use three TVA-developed liquid fertilizer processes, and seven covering electric furnace designs, phosphoric acid plant design, production of superphosphoric acid, and expansion of electric furnace slag.

In addition, 10 licenses have been issued covering other processes or equipment including developments concerning production of aluminum silicon alloys, nitric phosphate, calcium metaphosphate, high analysis superphosphate, carbon monoxide catalyst and fused tricalcium phosphate and the wet-grinding of mica.

During the fiscal year there were 733 "technical" visitors who spent 1,594 man-days at the Fertilizer-Munitions Development Center at Muscle Shoals. This included 143 from foreign countries.

CAREFUL APPLICATION OF INSECTICIDES URGED

Strict controls on the use of insecticides in Idaho were threatened if carelessness in application continues.

Stanley I. Trenhaile, Idaho commissioner of agriculture, said the law controlling sale and application of all insecticides "would definitely work a hardship on all users."

"It might be necessary, as so much of Idaho's dairy products are shipped out of state and once they cross the state borders any infraction of pure food and drug tolerances would be handled by the federal government."

Trenhaile said his office has received a number of complaints "against the careless methods of application which allow wind to carry the insecticides into adjoining fields."

He urged all segments of the state's agricultural industry to "work together and respect the rights of others."

USDA NAMES McCLELLAN

Dr. Wilbur D. McClellan has been appointed as assistant chief, Crops Protection Research Branch, Crops Research Div., Agricultural Research Service, USDA.

He has been an instructor in Plant Pathology at the University of Maryland, a junior pathologist for USDA, director of research for Mid-State Chemical Supply Co., and most recently was principal plant pathologist, State Experiment Stations Div., ARS, USDA.

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Chemicals

TVA WORKS ON NEW PROCESS FOR PRODUCING GRANULAR DIAMMONIUM PHOSPHATE

Charles H. Young, TVA's Manager of Chemical Engineering, reports that TVA engineers are developing a new process for producing granular diammonium phosphate fertilizer.

"The process has an advantage over the previously developed crystallizer method in that it can use low-cost wet-process phosphoric acid without a purification step," he said. "Also, the equipment required is more familiar to the fertilizer industry and should be less costly. By taking advantage of chemical heat in the reaction of acid and ammonia, recycle rates and drying requirements are reduced below those of some competitive processes. The grade of the product depends on the purity of the phosphoric acid available, ranging up to 21-53-0 when electric-furnace acid is used. The process is being adapted to the production of various grades, some containing potash."

"The TVA ammoniator is the key equipment in the process. Acid is partially preneutralized in a tank followed by completion of the ammoniation to diammonium phosphate in the ammoniator-granulator drum. Excess ammonia must be fed to the drum to produce diammonium phosphate; therefore, a scrubber is required to recover ammonia from the exhaust gases. The phosphoric acid is fed to the scrubber to absorb the ammonia, and the solution is fed to the preneutralizer. A recycle ratio of about 3 to 1 is required for control of granulation. Physical properties of the closely sized granular product are excellent."

MH-30 ALONG HIGHWAYS

State highway departments across the country are taking a hard look at a growth inhibitor as a way to cut down their bills for keeping grass mowed along the nation's parkways. MH-30, developed by Naugatuck Chemical Div., United States Rubber Co., has slowed grass growth along sections of Connecticut highways for the last six years. In some cases it cut down mowing frequency from 17 to 2.

At least four other states were expected to launch tests of the chemical along their parkways this season. Chemical lawn-mowing, it is estimated, could clip millions of dollars from annual highway maintenance costs.

CHEMICAL REDUCES WATER NEEDS OF GROWING CORN

Water needs of growing corn are being reduced one-third in research by W. J. Roberts of the Illinois State Water Survey working with cooperation of the Universiry of Illinois Botany Dept.

They use hexadecanol—synthetic whale oil—to cut water lost by corn plants in transpiration—breathing through the stomata or pores in the leaves.

Hexadecanol in powder form is mixed with the soil. Apparently it goes to the plant leaves and forms a protective film in the stomata where all transpiration occurs.

Experiments using radioactive hexadecanol as tracers are being started to determine exactly where the material goes and how the reduction in transpiration is accomplished.

FERTILIZER WITH PHOSPHATE DOUBLED ALFALFA YIELD

Fertilizer containing 200 pounds of phosphate nearly doubled the yield of alfalfa hay in recent tests conducted in Wyoming, reports Dr. L. I. Painter of the University of Wyoming Plant Science Div. 4.78 tons of hay per acre were produced from this rate of fertilization as compared to only 2.64 tons per acre for the unfertilized acreage. "In fact, significant yield increases above the check plot were obtained from all the treatments of phosphate fertilizer," Dr. Painter said.

"This study was begun in 1958 to measure the influence of fertilizer containing phosphate on yield and quality of alfalfa hay as measured by phosphorus, calcium and protein content of the tissue," Dr. Painter said. "The fertilizer was applied in 40 pound increments up to 320 pounds of available phosphate per acre. This past year yields were obtained for two cuttings and plant tissue samples were taken for making quality determinations. Chemical analyses of the plant tissue are currently in progress and results will be announced when available.

Other tests were established in 1956 to study the effect of application time and rate of fertilizer containing phosphate on yield of alfalfa hay over a four-year period. "In every instance the application of fertilizer increased the yield substantially over the check," Dr. Painter said.

At the 320 pound level of fertilizer applied at different rates over the four-year period the total yield of alfalfa hay ranged from 17.45 to 19.12 tons per acre as compared to 13.51 tons per acre on the plot which received no fertilizer.

Data obtained indicated that for 320 and 360 pound per acre levels of fertilization there is considerable leeway as to when it may be applied.

RECORD PHOSPHATE OUTPUT, FERT. DEMAND IN IDAHO

"Elemental phosphate production in Idaho established new records in the first six months of the year," Ralph J. Comstock Jr., Pocatello, senior vice president of the First Security Bank of Idaho, reported in a summary of the state's economy.

"Fertilizer demand was also at a new all-time high in the state," the banker said.

LIQUID APPLICATOR FOR SEED TREATMENT

Morton Chemical Co. is distributing free with purchases of Panogen, Drinox or Pandrinox, a Pandri-Meter applicator. Used in conjunction with an auger elevator, the Pandri-Meter enables farmers to treat seed while it is being moved from bin to bin, or from bin to wagon.

The applicator consists of a one-inch plastic bottle cap equipped with a length of small hose and an automatic air intake control. When attached to a bottle of liquid seed treatment, this simple device meters the liquid at the desired amount per bushel. Rate of application is increased or decreased by raising or lowering the open end of the applicator hose.

SWIFT TO BUILD PHOS. ACID PLANT IN FLORIDA

Plans for construction of a new phosphoric acid producing plant at the Swift & Co. Phosphate Center, south of Bartow, Fla., were announced recently by W. F. Price, general manager of Swift's Agricultural Chemical Div.

A contract for construction of the plant—which will double the company's production of phosphoric acid—has been arranged with Dorr-Oliver. Construction is expected to begin in the fall, with completion in May, 1961.

Swift has had phosphate mining operations in the Bartow and Fort Meade areas for a number of years and has a triple superphosphate plant in connection with its mining operations.

"These new facilities will enable us to substantially increase the production of triple superphosphate which is an essential ingredient in the manufacture of plant food," Price said.

"The plant will also make available liquid phosphoric acid for shipment to other centers for use in the production of plant food products."

AROCLOR COMPOUNDS

Several "uniquely stable and versatile" organic chemical compounds which are finding new uses in products varying from adhesives to insecticides, specialized lubricants and surface coatings, are described in a new booklet published by Monsanto Chemical Co.

Marketed under the Aroclor trademark, the compounds are a series of chlorinated biphenyls and polyphenyls ranging from oily fluids to crystalline powders. They are reported to prolong the effectiveness of insecticides by retarding evaporation.

Copies of the 43-page booklet entitled "The Aroclor Compounds" are available by

CIRCLING 293 ON SERVICE CARD

CHEMICALS CONTROL MORNING GLORY, RUSSIAN KNAP WEED

Two liquid chemicals and a third chemical in granular form have been found extremely effective for weed control in Utah's Iron county.

Wallace Sjoblom, county agricultural agent, said testing on two plots for control of morning glory and Russian knap weed proved the power of two benzoic acid type chemicals tradenamed Trysben and Benzac. The third chemical, Benzabar, also proved effective.

"STOP-SCALD" MARKETED BY MONSANTO CHEMICAL

A new chemical growth regulator which protects apples from a brownish discoloration and softening of the skin known as common scald, source of an average $8 million annual loss to apple growers, has been announced by Monsanto Chemical Co.

Tradenamed "Stop Scald," it is being marketed under the Monsanto label following FDA and USDA clearances of the compound as safe and effective for this use.

Common scald is reported to be the single most serious storage hazard to the 70–80 million bushels of apples which go to market as fresh produce each year.

A post-harvest spray or dip containing as little as two pints of "Stop Scald" to 100 gallons of water is sufficient, according to Monsanto, to prevent common scald in all commonly susceptible varieties of apples.

Active ingredient of "Stop Scald" is a chemical antioxidant (1,2-dihydro-6-ethoxy-2, 2, 4-trimethylquinoline) known generally as ethoxyquin.

NEMAGON AND VC-13 FOR NEMATODE CONTROL

At least two chemicals which will kill destructive nematodes on the roots of plants and not harm the plant are now available, according to Dr. H. N. Miller, plant pathologist with the Florida Agricultural Experiment Station.

The nematocides are Nemagon and VC-13. Both come as emulsion concentrates, Nemagon containing 48 or 70 per cent and VC-13, 75 per cent active ingredients by weight. They kill nematodes, but not weeds and fungi.

Nemagon may be injected into the soil, used as a soil drench or applied broadcast in granular form. Four to six pounds of technical nemagon are used per acre. VC-13 is used as a soil drench at the rate of 27 gallons per acre.

NEW PACKAGE FOR P-TERTIARY BUTYLPHENOL

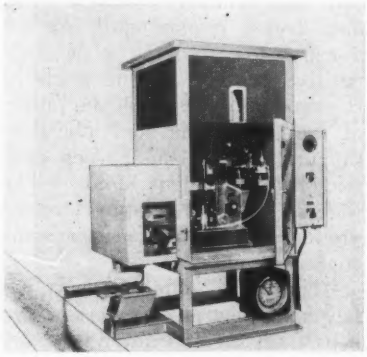
Stepan Chemical Co.'s Industrial Chemicals Div. now offers p-tertiary butylphenol as free-flowing flakes in 50-pound, glassine-lined 5-ply kraft bags. The molten form is available in insulated tanktrucks and tankcars.

Flakes are white and over 98% pure, the firm said, containing less than 1.5% ditertiary butyplhenol.

The product is used as an intermediate in producing insecticides, varnishes, and other products.

Equipment Supplies

CONTINUOUS WEIGHING SYSTEM DEVELOPED



A new type machine for high-precision continuous weighing of loose, free-flowing granular solids has been developed by The Exact Weight Scale Co.

The machine introduces an improved system for inserting dry additives into processing lines operating by conveyor, pipeline or other continuous flow methods. It is reported to have many applications in processing streams of chemicals, fertilizers, feeds, seeds, and similar products where high concentrate additives must be inserted in exacting quantities.

The automatic unit is based on accurately net weighed quantities dumped at uniform time intervals. When placed over a product stream a precision scale, with over-and-under indicator, weighs precise amounts of the additive in a net weigh hopper. An air operated mechanism then dumps the additive into a small, secondary hopper which, in turn, feeds the additive into a vibratory feeder. From the

vibratory feeder the additive is introduced into the continuous processing line in a uniform even flow.

Handling of a wide variety of products in quantities from 1 oz. to 3 lbs. and 3 lbs. to 10 lbs. is possible with the unit, Exact Weight said. For additional information

CIRCLE 294 ON SERVICE CARD

BULK FEED BODIES

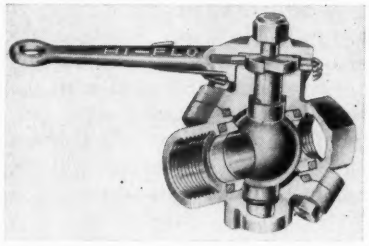
Reports indicate that certain design and construction features make the new C-70 series of bulk feed bodies rugged enough to handle both bulk feed and bulk fertilizer, says Simonsen Manufacturing Co. The equipment is available in 5 to 15 ton capacities, in single and tandem models.

Capacities of the hydraulically driven augers have been increased to the extent that it is possible to unload 1,500 pounds per minute. Three compartments and three floor traps are standard.

Full information, including specifications and prices, can be obtained by

CIRCLING 295 ON SERVICE CARD

BESLER BALL VALVES



Besler Corp.'s Valve Div. is offering ball valves to the general industrial market. According to Timothy Colvin, president, these valves have been developed through nine years of rugged and abrasive use on agricultural equipment, and some 40,000 are in service.

Formerly known as "Bes-Val" or "Flo-Rul" valve, name has been changed to "Hi-Flo". Sizes from $\frac{3}{8}$" to 2" are available for the industrial market and 3", 4", 6" and 8" sizes will be available after the first of the year. Operating pressures extend to 1,000 psi.

The Hi-Flo valve is stocked in bronze and aluminum by the firm; stainless steel and ductile iron versions are available on order.

Illustrated literature is available by

CIRCLING 296 ON SERVICE CARD

HOUGH'S H-30

The Frank G. Hough Co. now is producing a new size and type of tractor shovel, the H-30 Payloader.

This new Model H-30 has an operating capacity of 3,000 lbs. and is equipped with a one cu. yd. (S.A.E. rated) bucket.

The four-wheel-drive features

Hough's own full power-shift Paylomatic transmission with matched torque-converter. With three speed ranges in each direction, all shifts can be made "on-the-go" with no need to stop for "range" shifts.

The H-30 is powered with a 77½ hp heavy-duty gas engine. Clearance of 8'4" under the cutting edge, with bucket in dumped position, is even greater than some larger machines as is the 29" dumping reach ahead of the front tires, Hough said.

Among its other features: four-wheel hydraulic brakes, boom structures positioned ahead of and away from operator for utmost safety; and dual foot brake pedals. For complete information and specfications,

CIRCLE 297 ON SERVICE CARD

ENTOLETER CENTRIFUGAL MIXER FOR PESTICIDES

The Entoleter Centrifugal Mixer can help pesticide formulating plants up production and improve their product, reports Entoleter, Inc.

A 7½ hp mixer running at 3500 rpm rotor speed appears to be the most widely used model for this application, the firm said. It provides final blending to produce the finished pesticide after the requisite quantity of active ingredients and dye have been added to the carrier and passed through a $\frac{1}{16}$-screen.

The impact mills apply extreme energy to the blend through the use of centrifugal force which hurls the pre-blend against a series of impactors where the shattering force of impact performs both the desired particle size reduction and intimate dispersion of the end product.

For details,

CIRCLE 298 ON SERVICE CARD

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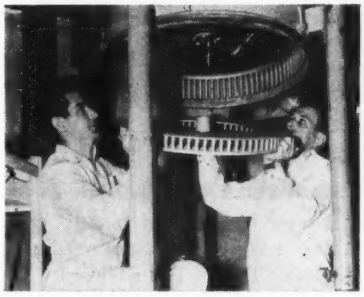
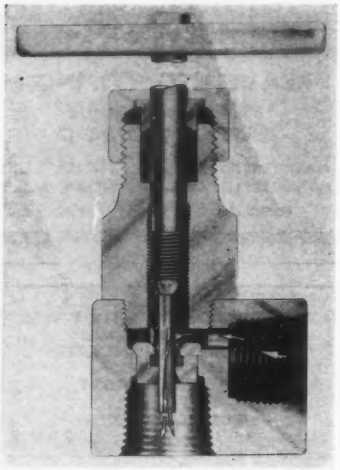
FOR SALE: Louisville 7' x 70' rotary cooler, ½" welded shell; Davenport 8' x 60' rotary coolers, $\frac{7}{16}$" welded shell. Raymond 50" 5-roller hi-side mill, oil journals, dbl. whizzer separator. 18,000 gal. aluminum tanks. Sturtevant Unused #9 rotary blender, 150 cu. ft. Perry Equipment Corp., 1430 N. 6th St., Phila. 22, Pa.



Here final rotor adjustments are made before the Entoleter Centrifugal Mixer goes into action.

ULTRA-LOW FLOW CONTROL



The General-American Valve Co. announces the Micro-Flow Valve, a new-type valve for the control of ultra-small amounts of liquid or gas. With this valve a Cv (flow coefficient) of as low as .003 to zero can be controlled linearly over a stem travel of 5/8 inch, the firm said. Higher ranges are also standard.

At 5000 psi the valve can be throttled from 3 ccpm to 5 gpm. At lower pressures the valve has been used to deliver as little as 10 drops per hour. Pressure ratings are to 10,000 psi.

For details,
CIRCLE 299 ON SERVICE CARD

COLLAPSIBLE CONTAINER

A new collapsible plastic container has been announced by Highway Trailer Industries, Inc.

The containers will make it possible to carry grains in one direction, for example, and liquid chemicals in the same containers on the return trip without danger of contamination, the firm said.

Tradenamed "Flexi-Drum, they are being introduced to the market this month.

Empty containers, regardless of size, collapse to a height of 12 inches. Initially three sizes are being offered:

(1) 40 in. high, 35 cu. ft. (250 gal.) cap., tare wt. of 106 lbs.;

(2) 69 in. high, 70 cu. ft. (500 gal.) cap., tare wt. of 113 lbs.;

(3) 98 in. high, 105 cu. ft. (800 gal.) cap., tare wt. of 120 lbs.

Diameter on all containers is 47 inches. For complete information,
CIRCLE 300 ON SERVICE CARD

Suppliers Briefs

Allis-Chalmers Mfg. Co. sales for the first six months of 1960 amounted to $282.7 million while earnings totaled $7,780,145. This compares with sales of $221,226,490 and earnings of $5,314,739 for the first six months of 1959.

The C. O. Bartlett & Snow Co. is celebrating its 75th anniversary this year. The firm manufactures equipment for handling and processing bulk materials in steel, coal, foundry, chemical, grain and food products plants.

Baughman Mfg. Co. Allan A. Deverick has been appointed as vice president in charge of sales. He had been regional sales manager for Baughman at Tulsa, Okla., covering a territory extending from Georgia on the southeast to Montana on the northwest.

Edward Brown becomes central district sales manager for the firm. He will cover a territory that includes Michigan, Wisconsin, Illinois, Indiana, Ohio, Kentucky and Tennessee.

J. I. Case Co. has inaugurated a new 6800 mile nationwide communications system. The teletypewriter service was installed for Case by the Bell System to replace the manually operated system formerly leased from Bell. Case said the network will enable its sales office to place orders and sales inquiries instantaneously with the plants, thereby shortening time required to fulfill a customer's request.

Chase Bag Co. W. L. "Bill" Yearsley has been placed in charge of the company's Denver sales office. He has been with the packaging firm since 1937, most of this time as its representative in Des Moines, Iowa.

Delaware Barrel & Drum Co., Inc. has entered into a $1 million expansion program to be completed by June, 1961. The firm has purchased the former plant of Pullman Co. in Wilmington, which consists of 215,000 square feet. An additional five acres of ground for future expansion was purchased. The new program is designed to expand production and warehousing of molded polyethylene drums and tanks of 5 to 500 gallons inclusive.

Dorr-Oliver Engineering, Ltd. has been awarded a contract to design and construct a 200 tpd plant for processing a large deposit of Ocala limestone at the quarry of Camp Concrete Corp. Company which awarded the contract was Chemical Lime, Inc., of Ocala, Fla., recently organized to manufacture quicklime and hydrated lime for the chemical processing and other industries of the state. Dorr-Oliver is to provide the plant on a turnkey basis, with completion scheduled for Summer, 1961.

Foote Mineral Co. has authorized construction of a 20-million-pound-per-year electrolytic manganese facility at its new Johnsonville, Tenn., plant site. The plant will be built in two stages. First unit of 10 million pounds per year is expected to be on stream in late 1961 or early 1962.

Gilman Paper Co. Charles Gilman, Jr., executive vice president, operations, has announced a multi-million dollar capital expenditure program involving mill additions at St. Marys Kraft Corp., St. Marys, Ga., and Gilman Paper Co., Gilman, Vt.

A new third machine, a 236" width Beloit Paper Machine, for manufacture of light, medium and heavy-weight unbleached kraft papers, will be installed in a new building at St. Marys. At Gilman, No. 2 Paper Machine will be rebuilt to increase its speed.

Grumman Aircraft Engineering Corp. reports that the first Grumman Ag-Cats have been delivered to Uruguay and to Puerto Rico. Delivery of both aircraft was made by flying the maneuverable crop duster to the customer.

The trip to Paysandu, Uruguay, covered 8,995 miles during which the towering Andes Mountains were crossed by the open cockpit, single engine biplane. The pilot,

Fernando J. Moreno, spent a total of 156 solo hours in the aircraft in delivering it to the Litoral Sugar Co.

The Ag-Cat delivered to Puerto Rico was flown by Joaquin Baez Jr., operator of a sugar cane plantation at Ponce. The trip covered 2,468 miles, about 1,200 of which were over open water, necessitating island-hopping through the Bahamas.

Merck & Co., Inc. Dr. Laurent Michaud, manager of animal science nutrition research, Merck Sharp & Dohme Research Laboratories Div., addressed the 1960 convention of Canadian Veterinary Medical Assn. He told the meeting that veterinarians who are prepared to meet the needs of growing specialization and integration in agriculture face broader opportunities than ever before.

Michigan Chemical Corp. Judson H. Whitman has been advanced to assistant director, Rare Earths and Thorium Div. Whitman joined Michigan Chemical in April 1957 as mining engineer of the same division.

Midstate Machinery Co. has appointed Woods Construction Co. of Fort Dodge, Iowa, to market the new Midstate fertilizer plants. Woods will supply engineering and construction, if desired, and complete installation and service facilities throughout Iowa, southern Minnesota, parts of Missouri, and eastern sections of North Dakota, South Dakota, Nebraska and Kansas.

St. Regis Paper Co. net sales for the first six months of 1960 reached a new high of $248,027,343, compared with $229,539,810 for the first half of 1959. Net earnings amounted to $11,755,689, equal after preferred dividends, to $1.20 a share on 9,633,750 shares of common stock. In addition, the company had a profit of $27,829,590 on the sale of the company's Canadian multiwall bag plants to Consolidated Paper Corp. Ltd. early in the year. St. Regis earnings in the first six months of last year were $14,128,369, equal to $1.54 a share on 9,024,047 shares.

Union Tank Car Co. reports gains in sales and net income for the first half of 1960 over the same period of 1959. Net income was $3,844,255 as compared with $2,589,444 in the same period last year. Sales were $55,059,348, as compared with $48,171,603 sales during the first half of 1959.

Vulcan Containers Inc., beginning this year, is foregoing its customary plant-wide summer vacation in response to more constant demand from industries the company serves. A staggered vacation schedule has been adopted to insure uniform year 'round service to pail and drum users.

Western Precipitation Div., Joy Mfg. Co. Patrick W. Zilliacus has been named general sales manager. Zilliacus was formerly manager of agency sales for the division, and had been manager of the Standard Fan and Dust Collector Products Dept. of Joy at New Philadelphia, Ohio, from May 1959 to November, 1959.

Yale Materials Handling Div. has appointed Pacific Lift Truck Co. exclusive Yale representative in southern California. As franchised representative, the West Coast company will assume management of the former Los Angeles branch of Yale & Towne, as well as the Yale San Diego sales and service location.

Gordon Patterson, Detroit industrialist, has been elected president and a director of The Yale & Towne Mfg. Co. Patterson previously was president of Square D Company. He succeeds Gilbert W. Chapman, who retired after 11 years as president of Y&T to devote his time to his civic affiliations.

For details on the upcoming

SECOND "FCMS"

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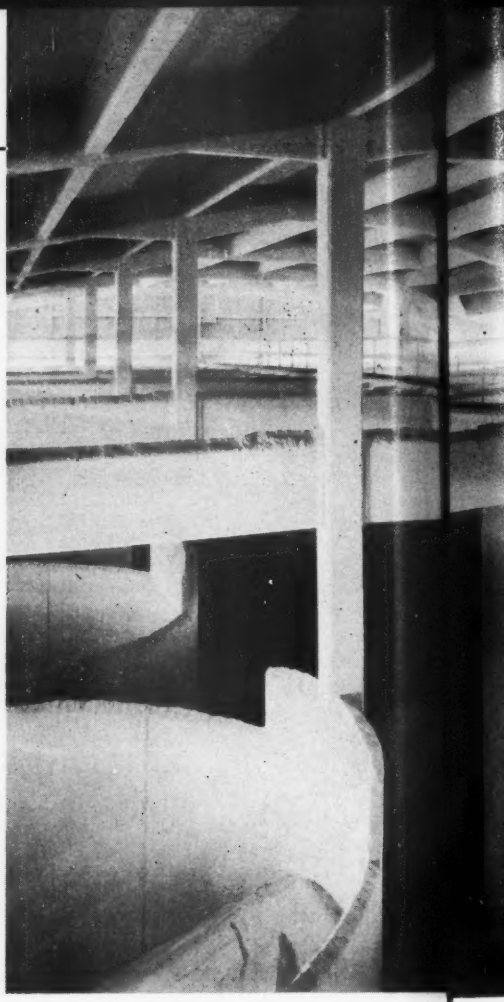
Pneumatic Classifiers Reclaim Phosphate



at the American Agr. Chem. plant in Pierce Fla. Among the first of their kind they present a threefold advantage in phosphate production.

By PAUL VANDENHOECK
Buell Engineering Co., Inc.

Two new high-efficiency pneumatic classifiers to separate fines from phosphate rock were recently put into operation by American Agricultural Chemical Company at its processing plant in Pierce, Polk county, Florida. The new classifiers, manufactured by the Buell Engineering Company, Inc., New York, N. Y., are among the first of their kind.

Advantages gained are threefold: (1) sufficient phosphate fines are now being reclaimed to pay for the new units in less than a year, (2) the installation has eliminated a long-standing dust problem and (3) an important high separation efficiency (95%) is realized, which is commercially unobtainable by any other method.

The dust difficulties at The American Agricultural Chemical Company resulted from the dumping of fines of less than 100 mesh into the same silos as larger particles. Phosphate rock larger than 100 mesh settles readily and creates no dust problem, whereas much of the 100 mesh material rises into the atmosphere and is lost. It was to separate the-100 mesh material from the aggregate and enable its independent collection that the new classifiers were installed.

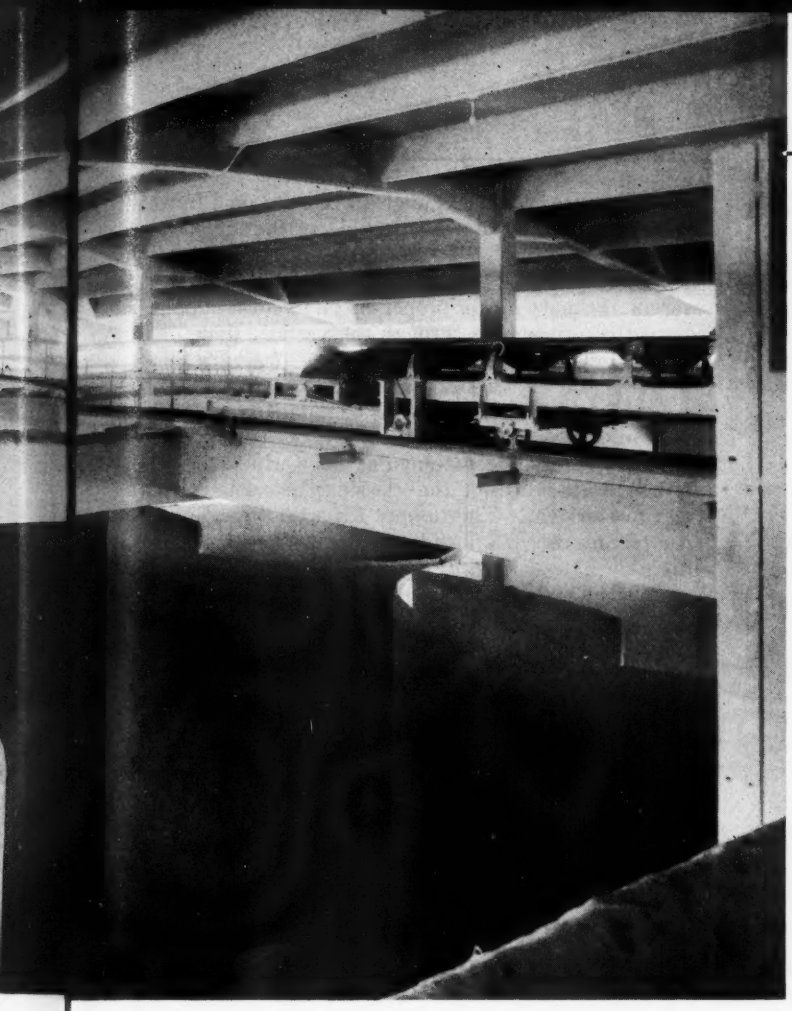
High separation efficiency was desired because the presence of fines decreases the value of the coarse and, at the same time, any coarse carried away with the fines would be disposed of at less than its full economic value. Also, excessive coarse material in the fines would hamper the operation of the pneumatic handling system used to transfer fines from the classifier to storage. The fines are stored with a finished milled product, whereas they were formerly lost to the atmosphere.

Each classifier processes the solids collected by a group of cyclones which cleans the exhaust gases of a rotary dryer. There are two dryers, each served by an independent group of cyclones, and solids from each group are conveyed to the respective classifier by screw conveyor.

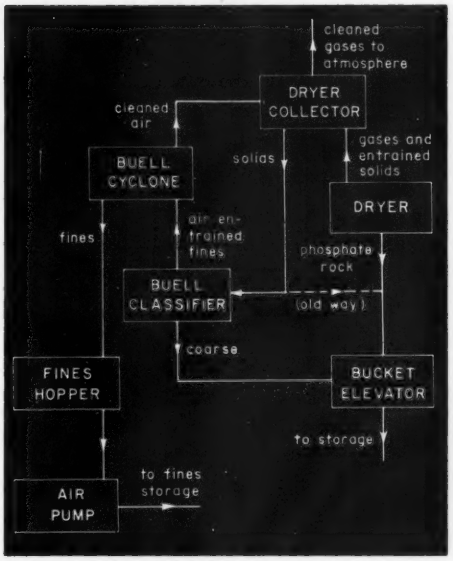
Fig. 1 is a schematic diagram of the classifier. Phosphate rock and room air enter at the top through a vertical inlet duct and travel downward. Particles larger than 100 mesh discharge from the bottom of the unit into the bucket elevator system which handles phosphates from the dryer. Material of less than 100 mesh is drawn off through an inclined duct at one side of the classifier. It travels upward into a Buell cyclone which separates the particles from the airstream and discharges them into a hopper. The hopper in turn empties into a pneumatic conveying system which delivers the fines to an enclosed storage bin. Cleaned air from the cyclone goes into the gas exhaust ducts of the dryers.

The overall result is that the coarse material is stored in open, dust-free bins, while the lighter particles—instead of being discharged into the air and wasted—are stored separately.

The Buell "Gravitational-Inertial" classifiers sepa-



Coarse material is stored in these silos. Before installation of classifiers, fines also were dumped here, causing waste of material and a dust problem.



Flow sheet of AAC's new classifier system.

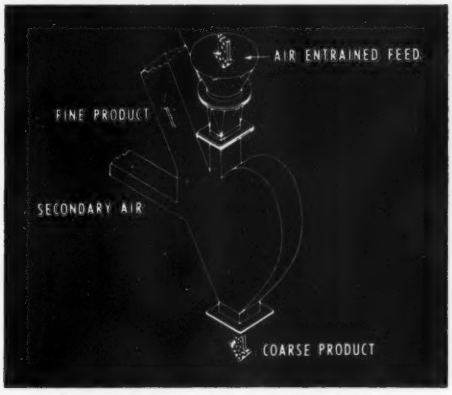
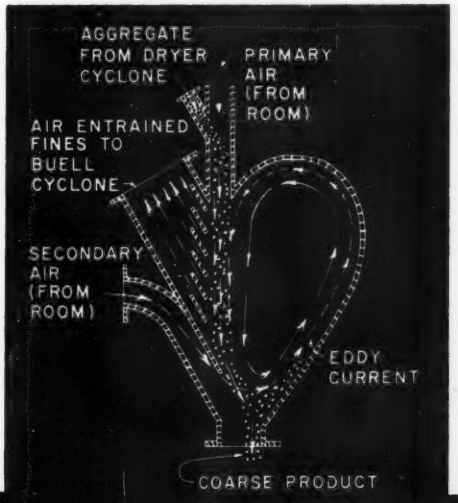


Fig. 1. Schemetic diagram of the classifier.

Fig. 2. Operational drawing depicting its functions.



rate the fines from the feed material by controlling aerodynamic forces in a manner not previously utilized in classification work. As shown in Fig. 2, the entering airstream makes a sharp "U" turn into the inclined discharge duct shortly after entering the classifier and simultaneously sets up a counter clockwise eddy current in the body of the classifier. The vanes at the mouth of the discharge duct aid in the control of airflow. Fine material is carried out with the airstream but coarser material cannot make the turn and continues downward. A secondary air supply crosses the coarse material near the bottom outlet and scrubs away any fines adhering to the larger particles. The secondary airstream, reinforcing the eddy current, travels around the inside of the classifier, and exits through the exhaust duct. The eddy current provides a moving wall containing the curtain of feed material in the classifying zone without detrimental frictional effects of a solid wall.

It is by regulating the secondary air supply that the cut point is varied. Air is drawn through the inclined outlet duct at a constant rate and the velocity of primary air will therefore vary as the secondary air supply is varied. The velocity of the primary air determines the size of particle which will or will not make the turn into the inclined discharge duct since it determines the downward inertial force on the particle. To exit with the fines the inertial force on a

(Continued on following page)

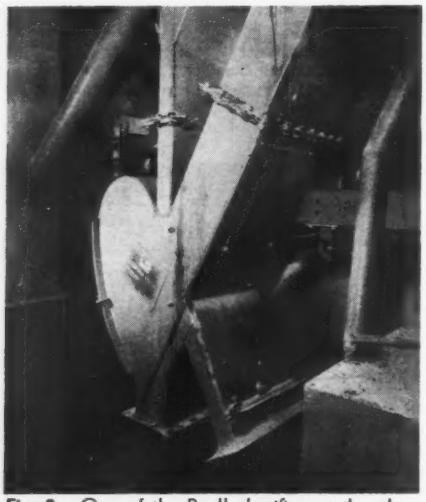


Fig. 3. One of the Buell classifiers at the phosphate mines of AAC in Pierce, Polk County, Florida.

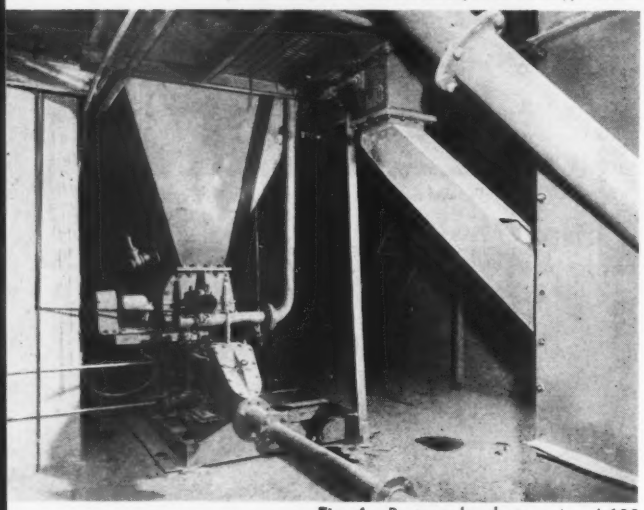


Fig. 4. Rectangular duct carries +100 mesh material from classifier to bucket elevator. Fines are handled by pneumatic conveying equipt. beneath hopper.

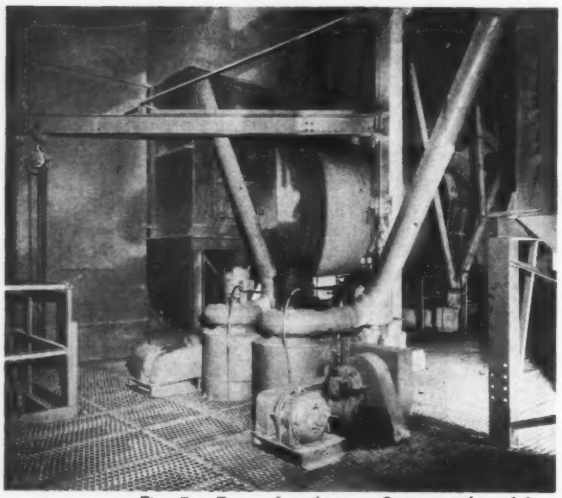


Fig. 5. Tops of cyclones. Suction sides of fans draw air entrained fines from classifiers. Cyclones separate fines and discharge them to hopper below.

particle must be small enough to be overcome by the drag force exerted on the particle as the air stream changes direction.

Fig. 3 shows one of the classifiers in the new Florida setup. Primary air for proper entrainment is supplied from the atmosphere through the vertical duct. Incoming material is delivered by the merging duct partially shown. The secondary air inlet extends downward and to the right. The damper which controls inlet air can be seen here.

Fig. 4 shows the rectangular duct which delivers coarse material from the classifier into the bucket elevator system. The hopper towards the center of the picture receives fines from the Buell cyclones and discharges them into the pneumatic conveying equipment which carries them to their special storage facilities.

Fig. 5 shows, in the center, the tops of the Buell cyclones which separate the fines from the airstream exhausted from the classifier. The ducts from the cyclones carry cleaned gases to the dryer exhaust ducts. The drive equipment on either side of the cyclones is for the screw conveyors which are located under the floor. Behind the cyclones are the compressor, air filter and compressor drive for the Fuller pneumatic conveying system. Also visible in the background is one of the dryers.

Spectacular results of the Florida installation are illustrated on the preceding page. Before the classifying equipment was put in, material both larger and smaller than 100 mesh was dumped into these storage silos.

The cloud above the bins was so thick it was impossible to distinguish the bins except by shutting off supply conveyors long enough for partial settlement of the dust. Not only have these billowing clouds vanished, but now, as the picture shows, there isn't even a haze. The supply conveyors, incidentally, are fed by the bucket elevators which receive phosphates from the dryers.

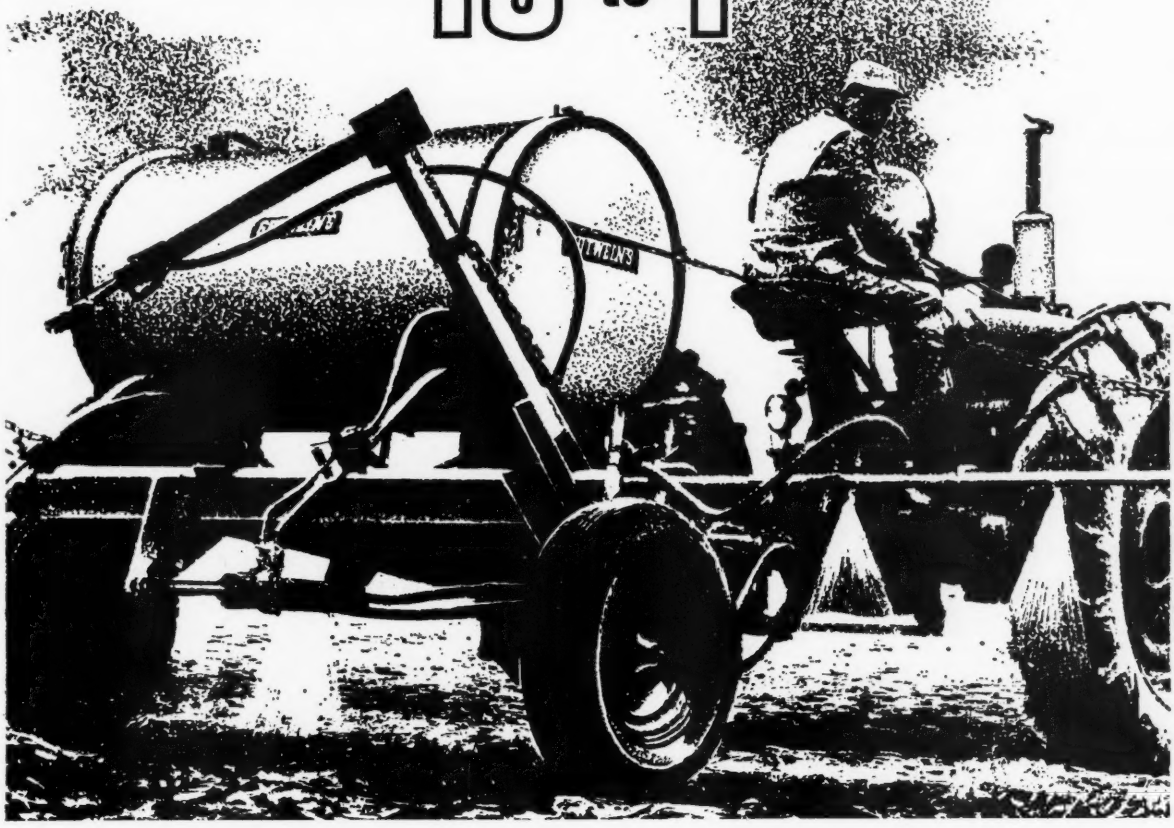
HOW THE CYCLONES PERFORM

More than 8,000 pounds of material an hour is delivered to the classifiers from the dryer cyclones. About half of this is +100 mesh and half is -100 mesh. Separation is so complete that the coarse material contains only about 5% fines whereas the fines contain only about 6% coarse material. Further, the respective stray particles are very near the cut point size. Particles of exact cut point size can go either with the fines or coarse, and there is a small chance that particles especially close to the cut point size will be collected with the wrong element.

The new classifiers have no moving parts and consequently require almost no maintenance. They also require little in the way of power—merely the fan motors at the cyclones. No operator attention is needed once the classifier is set for given conditions.

Until the classifiers were installed at The American Agricultural Chemical Company, up to 4,000 pounds of dusty material—the fines—was discharged into the main storage bins every hour and much of this was lost to the surrounding atmosphere. It is estimated that more than 95 percent of the formerly lost phosphates are now being reclaimed. ▲

Stainless Steel farm chemical tanks outlast others 10-to-1



Consider some of the advantages of a Stainless Steel sprayer tank: Twenty to thirty years of service* . . . no trouble with plugged nozzles or booms . . . almost no maintenance . . . switch from fertilizers to herbicides safely with only a proper water rinse between jobs . . . the saving of time that comes with a dependable rig. Of course the initial price of this tank is higher. You pay more in the beginning for a Stainless Steel tank, but it outlasts others ten-to-one. This higher initial cost becomes a bargain over the years. And it is the cost-per-year on equipment that is important!

Liquid chemicals are widely used on well managed farms. This practice is fast, sure, and saves labor. Taking advantage of this practice demands a tank that will be a steady performer. Stainless Steel's tough, smooth finish resists the corrosive attack of all farm chemicals. For example, tanks, lines, valves, booms and nozzles made of Stainless Steel resist the corrosive attack of complete liquid fertilizers. Freedom from corrosion and resulting residues assures uniform application rates and trouble-free service.

Talk to your equipment supplier about getting a Stainless Steel farm chemical tank. He'll probably recommend that your tank be made of Type 304 Stainless Steel. You'll find your Stainless Steel farm chemical tank is a sound investment that will pay off for years to come.

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Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

United States Steel

TECHNICAL REVIEW

F C

▸ *The American Chemical Society, at its 138th national meeting in New York City this month, discusses many subjects of interest to farm chemicals manufacturers.*

▸ *Abstracts of a few of the many fine papers presented appear below.*

Fertilizer and Soil Chemistry Division

EXPERIENCE IN THE PLANT PRODUCTION OF 11-33-0 GRADE LIQUID FERTILIZER FROM SUPERPHOSPHORIC ACID. *W. C. Scott and J. A. Wilbanks, Process Engineering Branch, TVA, Wilson Dam, Ala.*

Experimental plant production of 11-33-0 grade liquid fertilizer from superphosphoric acid (105% H_4PO_3 equivalent) and ammonia (for research and demonstration purposes) was started in March 1958, and limited quantities of the product were made available to industry for plant-scale tests of the production of high-analysis liquid fertilizers and for sequestration of the impurities in liquids made with wet-process acid. The plant consists essentially of a tank 3 feet in diameter by 6 feet high equipped with a perforated pipe ammonia sparger, an agitator, and cooling coils. Operating techniques and process control were discussed.

A NOVEL ROUTE TO A 30% P_2O_5 SUPERPHOSPHATE. *D. Q. Russell-Hill, Central Research Laboratory, Canadian Industries Ltd., McMasterville, Q., Canada.*

It was shown that unconcentrated wet-process phosphoric acid (about 43% H_3PO_4) can be used as "make-up" in the SO_3 absorption system of a contact sulfuric acid plant instead of the dilute sulfuric acid used in normal sulfuric acid production. The 98–99% strength H_2SO_4-H_3PO_4 mixture produced can be diluted with unconcentrated wet process acid to give a 70% mixed acid of approximate composition 40% H_2SO_4, 30% H_3PO_4, 30% H_2O. This acid, when used to acidulate phosphate rock, yields an enriched superphosphate containing 29–30% P_2O_5. The 70% acid derived from simple mixing of 95% sulfuric acid, the highest strength normally available, with unconcentrated wet process acid yields a superphosphate containing only 25–26% P_2O_5. Situations could exist where this would be a more economic route to a 30% P_2O_5 superphosphate than routes involving evaporation of wet process acid.

A pilot plant study of the absorption process has been made. The 98–99% mixed acid absorbed SO_3 as efficiently as 98–99% sulfuric acid. Impurities in the wet process acid precipitated out when the phosphoric acid was added to the 98–99% mixed acid but the resultant thin slurry (5% solids by volume) presented no particular handling or metering problems and did not cause plugging of the tower packing. Possible methods for measuring the strength of the mixed acid were examined. Tests showed that the strong mixed acid resembled 98–99% H_2SO_4 in its low corrosivity.

Agricultural and Food Chemistry Division

FRUITING OF COTTON IN RELATION TO GIBBERELLIN. *V. T. Walhood, Cotton Field Station, USDA, Shafter, Calif.*

The retention of the fruit of cotton has been related to the availability of small amounts of gibberellic acid, potassium gibberellate, and biologically active derivatives of gibberellic acid, when applied to the individual flowers at anthesis or shortly thereafter. The amount of material required for an effective increase in the retention of the bolls has been determined, also the interaction between potassium gibberellate and indoleacetic acid.

The comparative effect of applications of different forms of gibberellic acid to the individual flowers, to the subtending leaves, and to the entire plants by spraying is discussed. The relationship of boll retention to average boll size and yield is discussed.

The presence of endogenous gibberellins in cotton plants under various environmental conditions and at various stages of growth, and their relationship to boll retention and to the prevention of shedding by applications of gibberellic acid or its biologically active derivatives, is also discussed.

Chemical Marketing and Economics Division

HOW THE MARKETING MAN CAN HELP IMPROVE THE EFFECTIVENESS OF CHEMICAL ADVERTISING. *M. P. Ryan, Allied Chemical Corp., New York, N. Y.*

Presents a brief review of chemical advertising of the present and past, and an attempt to plot out some broad trends showing the direction which future chemical advertising may take. A comparison is then made of the changes and differences which have occurred in chemical advertising. With this background, suggestions are presented as to how the marketing man and other members of the sales group can help improve the effectiveness and efficiency of their advertising.

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EDITORIAL

FC

What the marketing concept is not!

Ever since we instituted all this emphasis on the marketing concept back in January 1959, we've encountered misconception after misconception about what marketing really means.

We've presented definitions of marketing by several recognized marketing authorities of the calibre of Charles E. St. Thomas and Dr. Hector "Don" Lazo. (Even a college marketing professor!) We've been told that these descriptive, concise statements erased a multitude of misconceptions about the concept.

But there still are plenty left to be fought. Thus, this month we've changed our approach. Here is what the marketing concept is *not!*

Marketing is NOT something that just happens to be in style at the present, but a way of doing business *profitably*. Those who contend otherwise just have not taken the time to really study the marketing concept. They're blinded by their own prejudices and preconceived notions.

There are some who are strangely affected by the thought that companies might be "exposed" by college marketing courses. Shades of the pesticide scare situation! What sort of "poisons" are supposed to eminate from those ivy covered halls? Leave it to the sensational publications and book publishers. Maybe they'll discover them for us!

We challenge anyone to name a science that has not benefitted from institutions of higher learning. The reason so much discussion of the concept has come out of the colleges is that it is a relatively *new* science.

You'll recall that in our February and April issues we quoted Thomas B. McCabe, president of Scott Paper Company, on this page. He has constantly referred to Scott as a *marketing* organization.

We read recently that Scott established a record high net income of $24.7 million on record sales of $297 million in 1959!

Here's a company that utilizes the total marketing concept to the fullest. Yet McCabe told the Sales Managers' Association of Philadelphia last January that " . . . too much research does little more than count heads—keep score. It tells us how many people do what. But facts as to *why* people buy are scanty and often controversial—where they are not totally lacking."

Thus McCabe called for the establishment of an *institute* that will furnish companies with more sure-proof, efficient methods of getting the answers to *why*.

If Scott needs this information, how much more valuable would it prove to be for the farm chemicals industry, which has yet to discover the *how* and *what* in many cases.

The marketing approach is NOT the same as the sales approach. Those who feel otherwise may think they have all the solutions, but in reality they haven't even determined what their *problem* is!

B. F. Bowman, Director of Marketing, Agricultural Division, American Cyanamid Company, told the 41st National Conference of the American Marketing Association:

"Virtually all market researchers will agree that the most important principle of marketing research is the *defining* of the problem."

He added that this is the *heart* of the total marketing concept. What does this include? Bowman explained:

"First, marketing research including continuing audits and special tailormade audits at various trade levels, analyses of changes in the economic status of various farmer groups, analyses of our marketing programs and those of our competition, blind product tests and opinion surveys. Our scientists continually check the technical strengths and weaknesses of our products versus those of the competition."

The total marketing concept is NOT just marketing. That's right! It involves the entire marketing complex, or "management triad"—which includes 1) production, 2) finance and 3) marketing.

Bowman explained Cyanamid's marketing complex as a "collection of advertising and promotion men, package designers, market researchers, manufacturing people, credit men, lawyers, and financiers" . . . who "realize that the basis of the entire business is its ability to create and fulfill customer needs at a profit."

All are specialists, he emphasized.

"Each specialization has developed its own ways of doing things and its own professional standards."

But the key word, Bowman stressed, is *leadership*. Without it a company can not weld these specialists into a *profitable* combination.

GORDON L. BERG

End of Sept. Cover Lost